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The Chadwick Lectures

ON

TYPHUS FEVER IN SERBIA.[1]

Delivered at the Royal Society of Medicine on Oct. 20th and 29th and Nov. 3rd, 1915,

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LECTURE I.

MR. PRESIDENT AND GENTLEMEN,—There are few more remarkable triumphs of sanitary science than the way in which it has diminished epidemic disease, and though cases of typhus from time to time appear in England, Scotland, and Ireland, there has been nothing in the nature of a typhus epidemic in these islands for more than 50 years.

Great as have been the triumphs of bacteriology in the realm of disease, the diminution of typhus cannot fairly be counted among them. All analogy suggests that typhus belongs to that class of disease which is known as the specific fevers or acute exanthemata, such as small-pox, scarlet fever, and measles. The clinical course of the disease, at least in well-developed cases, is so characteristic that it may be said to follow certain definite laws. This unvarying regularity is found in the case of few other diseases except the acute specific fevers, and indicates that it is due to some form of micro-organism. We have not, however, discovered the micro-organism of typhus fever even if we have good ground for surmising the way in which it is propagated, of which I shall speak in my third lecture. Though we have not yet discovered the germ or seed of this disease, we do know a great deal about the soil which is favourable for its growth and development, and in particular we know that overcrowding, dirt, and ill-nourishment are the grim conditions which help to promote this epidemic, and it is one or more of these conditions which we almost invariably find in the history of the different epidemics we are about to discuss.

War has always been the condition *par excellence* in which typhus has flourished, for in times of war there are sure to be large bodies of men frequently crowded together in most insufficient space; it is difficult for them to keep clean, and unless the commissariat is very perfectly managed there are sure to be occasions when it will break down and the men in consequence be ill-fed. One of the names for the disease is "morbus castrensis" or "military fever." In time of war it is exceedingly difficult to put into practice the teachings of sanitary science even in countries where such teachings are observed in times of peace. But in Serbia the doctrines of sanitary science, which even in countries like England and France are comparatively modern, can scarcely be said to have existed in times of peace, so there was no question of being able to put them into practice in the midst of a war—it was a question of beginning to learn the art of sanitation from the beginning. Had Serbia in the past been so fortunate as to have possessed a Chadwick she would certainly have suffered less from her terrible epidemic of typhus.

Typhus, as we know it to-day, was not definitely described until about the middle of the eighteenth century (1759) by a French physician, Boissier de Sauvages. The term "typhus" (τῦφος), which means literally smoke or fog, occurs frequently in the writings of Hippocrates to denote the dull, obfuscated mental condition into which many patients suffering from febrile diseases often fall, and which is a special characteristic of typhus fever. A comparison of the disease as we now know it with the descriptions of older authors shows that it has not in the course of time changed in any essential particular. Briefly, typhus, as we know it to-day and as it has probably always been in the past, is a disease characterised by sudden onset with high fever and severe pains in the head. From the third to the fifth day appears a very definite rash of macular rose spots—hence another of its names, "spotted fever"; it has a superficial resemblance to the rash of measles. This rash is usually seen first on the chest and upper part of the abdomen, then may pass to the extremities and face; the latter is always flushed, with injected conjunctivæ and contracted pupils. There is always some amount of delirium, and generally it is a very striking feature of the disease, patients frequently becoming very violent and even maniacal. The high fever continues for about 14 days—hence yet another name for it was 14-day fever—and then falls rapidly, if not suddenly, and as a rule the patient is out of danger, though left very prostrate, but with few complications. The mortality is a high one, about three times that of enteric fever, death as a rule occurring between the ninth and twelfth days of the disease.

In reading historical accounts of the various diseases which have prevailed in war-time in the past and which have decimated whole armies, we are struck with the frequency with which these diseases bear a close resemblance to typhus, and going back into remote antiquity there is little doubt that the plague of Athens at the beginning of the Peloponnesian War (430 B.C.), which has been so graphically described by Thucydides, bears a closer resemblance to typhus than to true Oriental plague, but of this relationship I shall speak more fully in the next lecture. The same is true of the so-called plague which devastated Rome in the time of Marcus Aurelius, and which is described by Galen. Frascatorius describes the symptoms of an epidemic fever prevailing in Italy in 1505, and again in 1528, which resembles what we know as typhus and which he distinguished from true plague (*febris vere pestilens*); the disease seemed so like measles that medical men found it necessary to point out the distinctions between the two affections. On both occasions its appearance was preceded by inclement weather and the almost total destruction of the crops. It was, doubtless, typhus and not plague which furnished the Black Assizes early in the sixteenth century, when judges, sheriffs, and aldermen were suddenly attacked with fatal illness which had spread from the prisoners brought up for trial; hence the disease used to be called "jail fever," and with reference to it Bacon said: "The most pernicious infection next to the plague is the smell of the jail when prisoners have been long and close and nastily kept, whereof we have had in our time experience twice or thrice, when both the judges that sat upon the jail and numbers of those that attended the business or were present sickened upon it and died. Therefore it were good wisdom that in such cases the jail were aired before they be brought forth."

In all diseases which are liable to take on an epidemic character we certainly find variation in the different epidemics, some being of greater and others of less severity, while certain symptoms which seem more prominent in one epidemic fall into the background in another, and typhus forms no exception to this rule.

We will now consider some of the epidemics of typhus fever which have occurred since the disease was definitely recognised and described. Here Ireland has an unenviable notoriety. Typhus in the British Isles used to be called "the Irish ague"—again a new name for the disease. The first epidemic was observed by Rogers at Cork in 1708; the preceding spring and summer were the coldest and the harvest the worst that had occurred for 47 years, while the winter of 1708–09 was characterised by the greatest frost all over Europe within the memory of man. In 1728 typhus returned to Ireland after a succession of three bad harvests. Oatmeal rose to an extravagant price, and food of all sorts was so scarce that riots occurred all over the country, to suppress which the military were called out. The epidemic lasted four years, reaching its climax in 1731. Early in the nineteenth century there was a serious epidemic of typhus which decimated Ireland. The years 1797–1800, prior to the outbreak, had been noted for the very wet seasons and peculiarly bad harvests; the price of bread, potatoes, and every necessary rose enormously. The disease reached its zenith in 1800–01, but in 1801 there was a good harvest and the disease began to decline, thus indicating how dependant it was on a poor supply of food. It was in consequence of this epidemic that numerous fever hospitals were first established in this country, beginning with Chester, Liverpool, Manchester, Norwich, Dublin, and Cork; the London Fever Hospital was first instituted in 1802.

The next serious epidemic in Ireland was in 1817. The winters from 1813–16 had been of intense severity; in February, 1816, the thermometer in London fell to 5° F.

[1] Dr. Moon went to Serbia early in 1915 just after our gallant ally's signal victory over the Austrians, only returning to England when he had himself contracted typhus fever.—ED. L.

below zero. This winter was followed by a cold and wet summer and autumn, causing a complete failure of the harvest and of the potato crop. There was extreme distress among the poor, who are described as wandering about the country gathering nettles, wild mustard, and other weeds to satisfy the cravings of hunger. The population of Ireland about this time was estimated at 6,000,000 and the number of sick at 737,000. In Dublin there were 70,000, or one-third of the inhabitants, victims of the disease. The total number of deaths was 44,000. It was at this time that there commenced on a great scale the migration of the poorest classes of Irish into the great towns of England and Scotland.

The greatest epidemic of typhus in Ireland followed the potato famine of 1847. The Irish themselves called the fever "road fever," because it specially attacked vagrants and road menders. It raged specially in Cork, Belfast, and Skibbereen, the mortality varying from 10 to 30 per cent.; one single hospital—the Cork Street Fever Hospital in Dublin—took in 12,000 cases in 11 months. The disease was imported to a great extent by the Irish into the large towns of Scotland and England and even America. In one year 90,000 Irish left their homes. The greatest activity on the part of the Government was unable to arrest the progress of the pestilence, which, indeed, could only be rooted out by a complete change in the political and social conditions of the island. The epidemic spread to Glasgow and Liverpool, but in the latter it was entirely confined to the Irish population, and of these in the first three months of the year 120,000 emigrated. Thus, in the case of Ireland, we find typhus induced by famine acting upon a population which was constantly in a state of semi-starvation.

Turning now to the relation of typhus to war, which more immediately concerns us to-day, the first recorded instance of what we must assume to be typhus in war of modern times was when Granada was besieged by Ferdinand in 1489, the disease which then broke out among the garrison was called by the Spaniards "el tabardiglio" from its spotted appearance. 17,000 troops died from it. Similarly, when Genoa was besieged by the French in 1799 the half-famished garrison fell a victim to typhus.

Typhus was a grim accompaniment of the Napoleonic Wars. After Austerlitz (1805) it was spread by the Russian prisoners and was found both in the victorious and defeated armies. It was carried to Strasburg, Augsburg, and the vicinity of Basle, eastwards to Moravia, Bohemia, and Galicia, and with their prisoners the French carried this unwelcome guest into the very heart of France, where it spread extensively in Autun, Semur, and Langres. After Napoleon's great victory over the Prussians at Jena and Auerstadt the latter suffered severely from typhus, and the hospitals of the great towns of West and East Prussia, such as Königsberg, Dantzig, and Thorn, were full of the sick.

In 1808–09 Spain and Portugal were the chief seat of typhus. At the siege of Saragossa (1808) typhus was a veritable scourge among the besieged, and from the Spanish prisoners it passed into France; for the Spaniards who fell into the hands of the French belonged mostly to undisciplined bands exhausted by cold and hunger. Since there were no carts they had to be dragged along impassable roadways and spend the nights in filthy hovels, lying on rotten straw; it was under such circumstances that typhus specially developed, but it was worst at Bourges, where all the prisoners were herded together. About the same time typhus was brought to England by the troops landed after the famous retreat from Corunna; the origin was here attributed to their being overcrowded on board ship and to mental depression.

Perhaps the most disastrous epidemic of typhus was that which overtook the French army in Russia during Napoleon's great campaign there in 1812. Before Napoleon arrived at Moscow typhus had already been rife in the Russian army and had even appeared at St. Petersburg. As soon as Napoleon crossed the Niemen on June 23rd the army suffered greatly from want of proper food owing to the country being deserted by the inhabitants and purposely laid waste. Consequently the French during their disastrous retreat fell an easy prey to the pestilence, for the whole country in the line of their retirement was deserted and laid waste, so that they were famished with hunger, the large number of dead horses poisoned the air, while the overcrowded hospitals, where even straw was lacking, became breeding-places of typhus. The whole sanitary arrangements, we are told, were of the most miserable description, and the means of treating such a thing as diarrhœa were confined to rice water and alcohol. The 3rd Army Corps on its arrival at Moscow numbered only 12,000 instead of 43,000 men, and of this same army corps, under the command of Maréchal Ney, there were only 20 men remaining when they reached Smolensk on the retreat from Moscow. After leaving Wilna the daily food of the soldier had consisted of roasted bread soaked in brandy. The typhus reached its worst in December, 1812, and January, 1813. At Wilna of 30,000 French prisoners 25,000 died (or 85 per cent.). In a single ward of the hospital of St. Ignatius, consisting of 50 beds, three successive relays of patients all perished except one. There was no question of any medical care, and the bleeding to which some doctors resorted only hastened the end of their patients. Of venesection Napoleon's famous surgeon, Baron Larrey, said: "La saignée préconisée et mise en pratique par quelques médecins dans cette épidémie, a été constamment funeste." The main cause of the high mortality was the wretched condition of the soldiers owing to their great privations. In 1813 the siege of Torgau, a small fortress on the Elbe, was characterised by a great mortality from typhus. There was excessive overcrowding in the hospitals and the mortality there rose to 33 per cent. and an exceptionally warm and damp winter seems to have made the mortality rise still higher. In spite of every effort the average number of the sick was 12,000. In November the total number of the dead was 8000, and of the 5000 inhabitants 12 per cent. died in a few weeks. The epidemic began to abate at the beginning of December, partly owing to the departure of the German troops and partly through the diminution of overcrowding by men and horses, many of the latter being killed for want of food. Another important cause of the lessening of the disease was the bombardment at the end of December, which by breaking a large number of windows and doors admitted plenty of fresh cold air, which is the greatest enemy of typhus. From September to January there were 20,000 deaths, not counting the numbers of corpses thrown by the soldiers into the Elbe in such heaps that they stopped the working of the mills for a time. After the entry of the Prussians the mortality during the next three months sank to 300, and by the end of February the epidemic could be regarded as extinguished. A striking example of the good results of fresh air is to be found in the Memoirs of Count Bengnot, who administered the Grand Duchy of Berg from 1803 to 1813. "After the battle of Leipsic," he writes, "Daru sent me 1600 sick and wounded. Dr. Abel, a Prussian doctor who had practised at the Court of Frederick the Great, came to my assistance. The weather was fine and dry. Dr. Abel put the sick into the courtyards of the castle of Bensberg and into the garden of Benrath, separating them as far as possible from one another and providing them with caps which protected them by day from the sun and by night from the cold. They were given nothing except soup and wine." The mortality was none the less considerable, but far removed from that in the hospitals of Mainz, Cologne, and Wesel. Large numbers of the civil population died at Erfurt, Dresden, and Breslau. In the Duchy of Nassau, with 300,000 inhabitants, during the great spread of typhus in the winter of 1813–14 43,000, or 14 per cent., of the population fell ill of the disease, and 20 per cent. of those attacked died. Many patients, and particularly doctors, ascribed their recovery to the fact that for weeks together in the cold winter they were transported from one provisional halting-place to another without being taken into the overcrowded hospitals, for here typhus and dysentery raged in the most appalling manner. Doctors seem to have suffered very largely in this epidemic, and it is recounted that in Leipsic, after the battle (1813), nearly all the medical students fell ill and most of them died.

One of the worst epidemics of typhus occurred in Upper Silesia from 1846 to 1848. Germany, except in times of war, had not been specially subject to typhus, and, in fact, after 1830 it was generally thought to have died out there. As is usual in these epidemics in peace time, prior to the outbreak there had been continued wet, with the consequent result of several bad harvests. The climate of this region is more inclement than might be expected from its latitude (50°), which is about the same as that of Cornwall; the soil is mainly clay; atmospheric deposits are considerable, and

the houses of the country population were mostly situated on a low-lying level and generally of a very wretched quality. Serious poverty had existed for some time owing to the decay of the linen industry which made wages very low, and the nourishment of the poorer classes was extremely bad. The food of the ordinary labourer consisted mainly of potatoes, cabbage, and buttermilk, meat was seldom enjoyed, there was a great love of drink, and the population suffered much from the destructive effects of endemic diseases, such as malaria. In 1847 a complete famine broke out and the poverty of the poorer classes became still further aggravated, so that the unfortunate peasant could no longer procure even the miserable rations to which he had accustomed himself. Roots and fungi and clover and couch grass were the only means he could find for abating his hunger. Nothing therefore could have been more favourable for an outbreak of typhus. Added to this the main features of the national character were then said to be slackness, ignorance, and superstition, which found rich nourishment in the fanaticism of the half-educated priests and the miserable condition of the national schools; and we can well imagine that the administrative measures for coping with such an epidemic were fairly inadequate, especially in the hands of the incompetent provincial officials who reigned supreme prior to the revolutionary movement of 1848. Even after the pestilence had come to an end in February, March, and April, 1848, one-third of the population of Ratibor (containing 60,000 inhabitants) had to be maintained at the public cost. The main characteristics of this epidemic were bronchial catarrh and pneumonia, gangrene of the extremities was common, and also hæmorrhages, and there was said to be a great tendency to relapses, which were often fatal; as a rule, relapses are most exceptional in typhus. One of the most distressing effects of the disease was the way in which in the general need every human feeling became suppressed. Thucydides has noted a similar effect upon men's minds caused by the plague at Athens. In May, 1848, the epidemic reached its end, but for a long time its effects were manifest.

We now come to the Crimean War (1854–56). Typhus caused the greatest havoc in the French and Russian armies, especially after the fall of Sebastopol. During the first six months of 1856 it was computed that out of 120,000 French troops 12,000 were attacked by typhus and half that number died of it. The cold of the winter 1855–56 was extreme and made the typhus worse. The enormous devastation caused by sickness is shown by the fact out of 303,260 soldiers who had been on the battle-field 200,000 (64 per cent.) had been in hospital, and only a quarter of these on account of wounds. The French troops returning home from the Crimea carried the contagion of typhus with them to the south coast of France, where it spread widely in Marseilles and Avignon, whereas up to that time the French had considered themselves fairly free from disease. On the whole, the English army suffered much less than the French from typhus in the Crimean War, and it is interesting to have a German authority for saying that "even at that time hygienic measures were far better understood and carried out in the English camp." Jacquot, chief medical officer of the French army, remarks on the French army in the Crimea: "There is no typhus in the summer when the soldier lives in the open air and leaves the barracks and tents open. With the winter season typhus developed twice running, and twice it disappeared on the return of the warm season which permitted free ventilation of the dwellings and life in the open air." From an official report we read that "the French soldier in the Crimea passed the last six months of the war under circumstances most unfavourable to health—namely, overcrowding in mud-floored tents or earth pits, surrounded by and immersed in deleterious exhalations from a soil sodden with animal and vegetable matters of all kinds, its surface being covered with indescribable filth. The severity of the season kept the men closely huddled under shelter, every possible entry of cold air being patched up. There was, further, an insufficiency of wholesome food, as proved by the extraordinary virulence of scurvy in the camp." The restoration of peace and an abundant harvest in 1856, with increased attention to sanitary arrangements among the poor were speedily followed by a subsidence of fever, and for four years typhus was less prevalent in London and the United Kingdom than at any previous period up to that time. In 1857 only 56 cases were admitted into the Edinburgh Royal Infirmary, and in both January and May that institution did not contain a single case. In London at this time it began to be thought possible that the London Fever Hospital should be devoted to other purposes, but in 1861 a serious epidemic of typhus broke out, the numbers in 1862 reaching a very exceptional height, while it also occurred in Glasgow and Liverpool.

In the Russo-Turkish War of 1876–78 the sanitary conditions were appalling. Of 200,000 patients, 50 per cent. were attacked by typhus, and half of those who were attacked died. During this epidemic the surgeons were the worst sufferers, the mortality among them reaching 60 per cent. On the other hand, it is interesting to note that in the Franco-German war of 1870 both armies remained entirely free from typhus, though one might have thought *a priori* that the siege of Paris furnished just the conditions favourable to the outbreak of the disease. Enteric and dysentery, on the other hand, which have an entirely different causation, claimed innumerable victims. But this complete immunity of the two armies affords a striking proof that the disease is caused not so much by the massing together and mobilisation of large masses of men as by their continued presence in regions where the disease is either endemic or happens to be raging at the time.

Climate.—Probably there is no part of Europe in which typhus has not been observed. Some of the greatest epidemics have occurred in Italy and Spain. But it is in Great Britain, and more particularly in Ireland, that typhus in the past has had its peculiar habitat, for until the last 50 years the disease has never been absent, in the intervals of the great epidemics, to the same extent as on the continent. There is no evidence that typhus has been observed in Australia or New Zealand. There are no records of it in Africa or the tropical parts of America, and it is said to be almost unknown in India. Apart from Upper Silesia, Germany is usually quite free from the disease, but in many parts of Russia, particularly in the Baltic and Polish provinces, the disease is endemic. In Hungary, Turkey, and the adjoining oriental countries the disease never becomes quite extinct, and from Sicily and Sardinia it never disappears entirely. Though epidemics of typhus vary in severity and duration at different times and in different circumstances, there is no evidence of any change in its type or essential characteristics; the typhus of modern times is the same as that described by the Italians, Frascatorius and Cardanus, in the sixteenth century. Seasons and meteorological conditions exercise but little influence on typhus, which thus differs from most other diseases. Doubtless the disease is more prevalent during the colder season, most epidemics reaching their height in the early month of the year and subsiding again during the summer, but this is because it is during the winter that all the factors which influence the individual disposition to the disease and the transmission of the poison are specially active, such as the poverty resulting from unemployment and the overcrowding for the sake of warmth in badly ventilated houses. With the coming of the summer the poorer part of the population tends to scatter, work becomes more plentiful, and the conditions of life are generally improved.

Though sporadic cases of typhus occur from time to time in Serbia there would have been no epidemic of typhus if it had not been for the war. Serbia is, of course, a poor country, but it is not subject to failure of crops and famine, and, as a rule, the peasants have sufficient to eat. It must be remembered that Serbia went to war in the autumn of 1912 against Turkey in alliance with the other Balkan States, Montenegro, Greece, and Bulgaria. Not content with that she was again at war in the following spring with Bulgaria, which was sufficient to have impoverished a country with much greater natural resources. When typhus actually broke out early last year—there had been a few sporadic cases as early as November and December, 1914—Serbia had already been at war with Austria for five months; she had suffered a serious defeat and gained a great victory, but it was this very victory which proved her undoing from the health point of view. For it appears that the typhus epidemic took its origin among the Austrian prisoners, of whom at the end of last year Serbia had taken 67,000. The starting-point seems to have been Valjevo, a small town in the north-west of Serbia, not far from the frontier of Bosnia. When evacuated by the Serbians it had been free from disease, but on their return they found 3000 wounded

and sick Austrians, many of them suffering from typhus fever. In one building 150 dead Austrians were found in the cellars; men and cattle were buried indiscriminately. From thence the disease spread in a south-easterly direction to Kragujevatz and then to Nish, the temporary capital of Serbia, where a very large number of troops were encamped. After that it spread further south to Skoplje, in New Serbia, and to Monastir, close to the borders of Greece, and, in fact, to wherever the army might be quartered. The civil population furnished a considerable number of cases, but the soldiers were the main victims of the disease. It was difficult to find a suitable place for housing the soldiers. Possibly, if they could all have been billeted out in tents it would have been better; as it was, they were all scattered about the towns. At Skoplje the soldiers were mainly quartered in old Turkish barracks, which left much to be desired as far as sanitation was concerned, and being for the most part in enclosed parts of the town they were eminently unsuitable. The soldiers slept upon straw, which is well enough when it is changed fairly often. As a rule, they had clean straw every ten days. I do not think I ever saw it later than the seventh day, when it was not pleasant either to the sense of sight or smell. However, in many of these barracks an attempt was made at putting the blankets out in the sun, which is the best of purifiers; also in one barrack I found that carbolic had been sprinkled about, which certainly seemed very advanced. The infection was carried largely by soldiers returning home from the army and by peasants wandering about at large or travelling in the crowded trains, clad in filthy clothes, rags, and goatskins, there being no restrictions placed on railway travelling or any attempt made to disinfect the carriages at first. Later, when early in March a detachment of the Royal Army Medical Corps arrived, Colonel Hunter and Lieutenant-Colonel Stammers, in conjunction with the Parliamentary Sanitary Commission at Nish, caused quarantine stations to be established behind the various camp lines, notification of disease was enforced, infectious patients were removed from their homes to hospitals, all railway communication was stopped for a time, and all soldiers on leave were recalled so that there might be no danger of reinfecting the railway carriages after the disinfection which was carried out during the stoppage. At a hospital in Nish at one time there were 700 patients to 200 beds, with only two doctors, no sanitary arrangements, and no bathrooms.

Early in March there were 8000 cases of typhus in the army apart from the civil population, as well as an equal number of relapsing fever, and about 1500 cases of enteric fever. In Kragujevatz, a town of 20,000 inhabitants, there were 1400 cases of typhus, and the number of deaths of all sorts in three months had been 3400, or 34 times the normal. The condition of things in some of the hospitals there early in January, 1915, was appalling. Miss Fraser, of the Scottish Women's Hospital, describes the terrible hospital overcrowding, how one would find a typhus case together with a case of dysentery and of relapsing fever lying three on two mattresses and exchanging germs. There was not even sufficient food. No one washed the patients, they lay there in the weakness of fever, becoming filthier and filthier. When a man dies the next comer is put on to the same dirty mattress between the same loathsome sheets.

About the middle of January, 1915, the epidemic of typhus had reached Skoplje, which is the part of Serbia with which I am personally acquainted. So rapid were its ravages that in one week there were 400 cases in the town of Skoplje and several thousands in the compounds round about. It was here that Lady Paget's hospital, which had been sent out by the Serbian Relief Fund, made itself so particularly useful. By being able to supply new clothing, disinfection and the consequent stamping out of vermin were rendered possible; a man cannot be expected to discard even a verminous garment in winter unless he can be provided with something to replace it. The inadequate disinfecting apparatus in the town entirely failed to cope with the enormous quantities of discarded underclothing, so that the distribution of fresh supplies of clothes, while the old ones were being disinfected, became one of the most important things to be done.

If one were asked what things were most required at Skoplje in the early days of the epidemic, I should say wood and blankets. Wood is, of course, their only form of fuel, and the absolute necessity of this in the cold months of the year requires no explanation. The local authority had bought up all the wood in the vicinity with a view to distributing it, but its methods were cumbersome and unskilful, so that a good deal of avoidable distress was caused, patients not only shivering with cold, but unable to get hot food or drink owing to the scarcity of fuel. Blankets seemed always insufficient; for a time at Skoplje a fresh supply could not be obtained for love or money, and the suffering entailed by being insufficiently clad at night during the cold of an early Serbian spring can be better imagined than described. In time of war it is always the simplest and, so to speak, the most obvious things of which one stands in need. Speaking as a physician, and I believe most surgeons would agree, the number of different drugs which are really necessary in time of war is surprisingly small, though the quantities required of lint, bandages, and aseptic gauze may well be extremely large.

The typhus colony—known in Skoplje as the Sixth Reserve Hospital, which was established owing to the activity of Lady Paget in persuading the Serbian authorities of its necessity, and which till recently was in charge of Dr. Maitland—was a really splendid group of buildings, and when occasion demands it can accommodate as many as 1500 cases. It is situated about a mile and a half from the town, and is so laid out that not only is it isolated from the rest of the district, but, if cholera were to break out before typhus had quite subsided, any part of it could be cut off from any other part, so that both diseases could be dealt with there with impunity. During the months of March and April, 1915, 1800 cases passed through the hospital. At first the staff was very insufficient, as most of the English nurses were surgical, whose services were required elsewhere, so it was necessary to employ Serbian soldier orderlies and some of the Austrian prisoners

In the early days when the disease was spreading like wildfire the fever hospital could not contain a tithe of the cases sent into the two isolation wards which were set apart for the purpose. The patients were crowded together in a most unsatisfactory way, often two in a bed. The condition in which the patients arrived at this typhus hospital was most miserable. They were driven up in small open carriages provided by the Serbian administration, half unconscious, shaking with fever and often almost naked. On their arrival they were turned out of the carriage, regardless as to whether they could stand or not or if there was anyone to receive them. All that could be attempted at first was to see that every patient was thoroughly cleansed and disinfected before he was taken into the ward, his clothing being all destroyed even when there was no available clean clothing in which to put him. The important thing was to get the scheme working, however imperfectly, so as to relieve the congestion in the town. One of the great difficulties arose from the fact that patients were so often sent in from the town to the hospital without any adequate notice; on one occasion 60 patients were sent in with only three hours' notice, and on another occasion 95 were sent with only a few hours' notice. Another cause of difficulty was the unreliability of the water-supply; it was often cut off without any warning.

During the early weeks of the typhus epidemic the greater number of patients at Skoplje were Austrian prisoners. At the start, before any nursing was available, deaths took place at the rate of from 20 to 30 a day; early in May, when there was a full staff working at the hospital on three consecutive days not a single death occurred, although there were over 500 patients. When no nursing was available the proportion of deaths amounted to 30 per cent.; with a staff of 25 it fell to 14 per cent. By May 6th the town had been entirely cleared of typhus, not a single case being recorded though patients were still sent in from surrounding towns and villages.

The main circumstances which favour an outbreak of typhus are: (1) overcrowding; (2) physical exhaustion; and (3) ill-nourishment. The last-named is so striking a feature that the disease has been called "febris famelica," or famine fever. War usually adds itself to one or more of these factors, and in the case of Serbia they were all present. One might naturally imagine that war which is conducted in the country and open air would not be connected with overcrowding, but, as a matter of fact, in war time men are often herded together in villages, where the houses may be as insanitary and ill-ventilated as the worst slums of a great city; then, again, in time of war hospitals readily become

filthy and overcrowded, and, unless there is a highly trained organisation at work there, they easily become centres of disease and veritable plague spots. In the case of the Serbians the overcrowding was due to the very large number of prisoners thrown upon them in the winter season, at a time when there was no adequate accommodation, and consequently they had to huddle together as best they could. Then, again, with regard to nourishment, in an ordinary way Serbia is a poor country, but there is no poverty; it is a country of peasants, each with a small piece of land, from labouring on which a man can gain a livelihood with no great difficulty, but there is not much to spare; there are no great quantities of accumulated capital, practically no manufactures, even the firearms have to be imported from abroad. Consequently, after being at war three times in the space of three years, the amount of poverty and distress which was present at the end of last year may well be imagined. War broke out before the harvest had been properly gathered in, and then there had been the waste of the two preceding years, and therefore the soldiers who had to undergo such great exertions, instead of having more food had less, and after the great victory of December, 1914, there were 67,000 Austrians to be fed in addition. Food was greatly wanted by the starving peasantry, and it was fortunate that the Serbian Relief Fund, through the agency of the Paget hospital, apart from all medical assistance, was able to send large supplies of rice to some of the surrounding villages, which were most gratefully accepted. With such a low physical condition and such inadequate nourishment it is hardly surprising that typhus should have spread so rapidly and that there should also have been a great mortality. For not only did this low physical condition favour the onset of typhus, but the patients more easily passed into an asthenic condition and so died. Then, too, there was a great shortage of doctors, so that it was almost impossible at first to make the necessary arrangements of isolation and segregation, which alone can prevent the spread of the disease. At the outbreak of the war it is estimated that there were not more than 400 Serbian doctors; the mortality among them was very great, so that in July of last year there were said to be only 230; there were, therefore, not enough for the army alone, quite apart from the civil population, which was thus left almost entirely without help in medical and sanitary matters. Last July, however, there were actually working in Serbia some 12 British hospital units and as many as 420 British nurses and doctors. An International Sanitary Commission was established with its headquarters at Nish. Under it the general medical and sanitary work of the country was roughly apportioned between the different coöperating nations. France had charge of the northern half of the country and the United States of the south. Nish and the immediate neighbourhood was under the Russians. To the British had fallen the care of the army and most of the hospital work except that done by the Serbians themselves.

In the midst of war, with the enemy only separated from you by a river, it is easy to understand how difficult it is to organise on the spur of the moment an administrative scheme which could cope with the outbreak of a serious epidemic, even in time of peace it would have been difficult for the Serbians, as they had practically no sanitary arrangements and their general condition in this respect is what ours was in the eighteenth century before Chadwick and the other great sanitary reformers had arisen. Finally, we must remember that the important part of Serbia known as New Serbia had been in the hands of the Turks until three years ago and that no progress, whether physical, intellectual, or moral, has ever emanated from the Turk.

DEATH OF A CENTENARIAN.—The death occurred at Lewes on May 17th of William Hoather, aged 103. A bricklayer by calling he had resided in the Sussex county town all his life. His family is noted for longevity. A sister attained the age of 100 and a brother lived to be 90.

TUBERCULOSIS IN CORNWALL.—The tuberculosis officer for Cornwall (Dr. C. Roper) in his annual report for 1915 alludes to the fact that Cornwall is heavily infected with tuberculosis. He states that in Cornwall, on Oct. 1st, 1915, there were 86,681 persons insured under the National Insurance Act, and in December, 1915, 310 (or 3·576 per 1000) were receiving domiciliary treatment, whereas in Dorset, Hampshire, and Wiltshire, with 289,408 insured persons only 296, or 1·02 per 1000, were receiving domiciliary treatment.

ARRANGEMENTS FOR THE CARE OF CASES OF NERVOUS AND MENTAL SHOCK COMING FROM OVERSEAS.

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IN view of the widespread interest taken in the soldiers sent home from the British armies overseas who are suffering from nervous shock, neurasthenia, and mental breakdown, the Director-General has permitted me to contribute the following information upon the arrangements provided in this country for the care and treatment of these cases.

Cases of nervous and mental breakdown due to shock, fatigue, exposure, and the other conditions incidental to a campaign began to arrive in England in September, 1914, shortly after the commencement of hostilities. The cases showed a varied symptomatology, but could be classified into three main groups. One group was recognised whose symptoms were due to the bursting of high-explosive shells in the immediate vicinity of the patient or to the secondary effects of the explosion, such as burial under earth and débris or the inhalation of noxious gases. The second group included cases of a general neurasthenic character (using this term in its widest sense) attributable to exhaustion of the nervous system resulting from physical and nervous strain, sleeplessness, fear, anxiety, and harassing sights and experiences. The third group included cases of mental breakdown—the milder as well as the more severe psychoses—mental confusion, mania, melancholia, and delusional and hallucinatory psychoses.

At the commencement of the war the cases of nervous shock and neurasthenia were transferred from overseas in company with medical and surgical cases, and were treated in the general wards of the hospitals at which they arrived, while the cases of mental disorder were transferred to D Block, Netley, the established institution for the treatment of mental patients in the service of the army.

As cases of nervous breakdown of all kinds were coming over in considerable numbers in consequence of the severe fighting during October and November, 1914, and as it was deemed desirable that special provision should be made for their treatment, Sir Alfred Keogh commissioned a special medical officer to proceed to France to report upon the cases—their nature and numbers and the conditions under which their treatment should be carried out to the best advantage both during the preliminary stages in France and afterwards on their arrival in this country. The general purport of the report was to the effect that the cases of nervous shock and neurasthenia should be given treatment in hospitals for nervous diseases and in special institutions provided for the purpose, under the care of physicians with special neurological knowledge. In consequence, arrangements were made whereby cases of neurasthenia and nervous breakdown were labelled on their departure from the base hospitals by medical officers with special qualifications for this work, and were transferred directly to the special hospitals and institutions provided for their treatment at home. By these means cases of functional paralysis, neurasthenia, and the milder psychoses were separated as early as possible from cases of severe mental disorder.

The special institutions were the hospitals for nervous diseases and the Red Cross Military Hospital, Maghull. This institution, which was built to meet the requirements of the Mental Deficiency Act, was handed over to the War Office in December, 1914, as it was necessary to have a hospital suitable for those "borderline" cases which required more special supervision than could be given in hospitals. It was desirable also to provide an institution to which mental cases might be sent from D Block in order to obviate their transference to public asylums—a policy which was adopted in view of the special circumstances attending the cause of the disorders. The Military Hospital, Maghull, being built upon the villa pattern, provided the requirements of these cases. To meet the increasing number of cases further institutions were added at later dates to those just mentioned—viz., the Springfield War Hospital for severe and protracted cases of neurasthenia and "borderline" cases, and the Napsbury War Hospital for cases of acute mental disorder requiring asylum care and supervision.

In order that all cases should receive a short period of rest and treatment on their return from France before being transferred to the most suitable institution for final disposal and treatment, two "clearing" hospitals were established early in 1915. These were:—

1. *The Neurological Section, 4th London Territorial General Hospital.*—All neurological[1] cases labelled as such at the British base hospitals overseas were transferred to this section. There they received a short probationary course of treatment, with the result that a large number recovered rapidly and in due course were returned for light duty. A certain number, however, were of a more serious and protracted character. These were transferred eventually to one of the hospitals provided for the purpose—viz., the Maghull or the Springfield War Hospitals. In the event of a patient becoming insane, he was transferred to D Block, Netley, or to the Napsbury War Hospital.

2. *D Block, Netley.*—All cases of acute mental disorder arising in soldiers overseas were transferred to this section. After a short period for observation and discriminatory sifting, the cases were transferred, on the one hand, to Napsbury War Hospital should they be considered of a certifiable character and to require care and treatment under asylum conditions; on the other hand, to the Maghull or Springfield War Hospitals if of a non-certifiable character but requiring more care and supervision than could be obtained in a general hospital.

The foregoing is a brief review of the provision for the cases of nervous and mental breakdown up to May, 1915. For some time before this date it had been noticed that a considerable number of neurological cases were coming from overseas directly into Central and Auxiliary Military Hospitals scattered throughout the country. Partly in order to meet the needs of these cases and partly in order to provide additional accommodation for the increasing number of cases, the Director-General established Neurological Sections in all the Territorial General Hospitals throughout England, Scotland, and Wales (May 24th, 1915). These sections were officered where possible by physicians specially versed in nervous diseases. The primary object of these sections was to furnish the same probationary course of treatment to the cases on arrival at the Territorial General Hospitals as was given in the clearing hospitals and to bring in all cases from the auxiliary hospitals in which suitable or sufficient treatment was not available. Moreover, cases of a serious or protracted nature or cases requiring supervision of a special character could be transferred from them to the Maghull or Springfield War Hospitals.

With the introduction of Neurological Sections into the Scottish General Territorial Hospitals it was considered advisable that a special hospital should be provided in Scotland. Through the assistance of the Scottish branch of the Red Cross this was forthcoming in the Royal Victoria Hospital, Edinburgh, which has continued to provide accommodation for cases of a neurological character.

At the same time a Neurological Section was formed in the main Hospital Building, Netley, the chief object of which was to permit the removal from the convoys arriving at D block from overseas of all cases which the medical officers there considered did not require supervision of a special kind, as some cases had so far recovered on arrival at Netley as to be deemed suitable for treatment in a Neurological rather than in a Mental Section.

In order to understand fully the arrangements existing at the present time for the care and treatment of unwounded soldiers suffering from nervous shock, neurasthenia, and mental disorder let us follow from overseas two or three hypothetical patients to their final destination in this country.

On arrival at one of the British base hospitals abroad the soldier's condition is investigated by a special medical officer. The patient then is sent to a section of a hospital according as his symptoms are of a neurological or a mental character. Should he be suffering from transitory mental symptoms, which subside rapidly, he is transferred from the Mental to the Neurological Section as soon as it is advisable to do so. In order to meet this class of case special accommodation is now being provided at the base hospitals overseas, so that the patient may be placed under the most suitable circumstances for rapid recovery. The patients are labelled for transference to one of the clearing hospitals at home; if neurological to the 4th London Territorial General Hospital, or the Neurological Section, R.V.H., Netley; if mental to D Block, Netley.

[1] The term "neurological" is used in this paper to refer to *unwounded* cases suffering from neurasthenia, the functional paralyses, hysteria, and the milder psychoses.

Neurological Cases.

On arrival at one of the clearing hospitals just mentioned, or at a Neurological Section in any Territorial General Hospital, the patient is given treatment. If his symptoms are slight or transitory and disappear rapidly, he is sent on furlough and later is returned to light duty. On the other hand, should the course of the disorder be less favourable, or should symptoms develop which require special supervision, or if it is the opinion of the medical officers that the case is likely to be protracted, or to require special treatment not available in the section, the patient may be transferred to one of the special hospitals for nervous diseases or to a special institution: (*a*) To the Military Hospital, Maghull, for the Northern and Western Commands; (*b*) to the Springfield War Hospital for the Eastern, Southern, and Aldershot Commands; and (*c*) to the Royal Victoria Hospital, Edinburgh, for the Scottish Command. If the patient is under treatment at one of the hospitals in the Irish Command, he may be transferred to the King George V. Hospital, Dublin.

If for various reasons it has not been possible to send patients home through the clearing hospitals so that they arrive directly from overseas at Central or Auxiliary Military Hospitals, in which there is no Neurological Section, or to which no medical officer with special experience is attached, a short period of treatment is given, but should recovery not take place within two or three weeks the patient is transferred for treatment to the Neurological Section of the nearest Territorial General Hospital.

From the preceding account it is evident that every case of nervous shock and neurasthenia coming from overseas is given a short period of rest and treatment in the hospital at home at which he arrives. In many instances this period is sufficient to permit of recovery. In other cases sufficient opportunity is provided to study the symptoms with a view to the transference of the patient to one of the special institutions should this further step be necessary.

Mental Cases.

On arrival from overseas at D Block, Netley, the patients are examined by the special medical officers attached to the hospital. All cases which are considered to be of a neurological character are removed for treatment to the Neurological Section in the main Hospital Building, Netley. All patients suffering from the severer psychoses of a certifiable type are given two or three weeks' probationary treatment in D Block. If no recovery has taken place during this time they are transferred to the Napsbury War Hospital, or to the Dykebar War Hospital, Paisley, if their domicile is in Scotland or if they belong to Scottish regiments.

No mental cases are transferred directly to Ireland, but special arrangements have been made recently by which overseas cases of mental disorder arriving in Ireland may be treated in a villa attached to the Richmond District Asylum.

The number of cases which recover during their stay in D Block and are returned to light duty is negligible, but a certain number recover sufficiently during their stay there to be no longer considered of a certifiable character. These latter are transferred to the Red Cross Military Hospital, Maghull, or the Springfield War Hospital for further observation and treatment.

A short account may be given of the institutions to which reference has been made, the general character of the cases retained for treatment, and the percentage of cases returned to light duty.

1. *The Neurological Sections at the 4th London Territorial General Hospital, and Royal Victoria Hospital, Netley.*—The Neurological Section of the 4th London General Hospital is the largest of the Neurological Sections, and in addition to receiving the majority of the neurological cases sent home directly from overseas, it accepts patients transferred from Central and Auxiliary Military Hospitals in the London district and adjoining counties. It contains 400 beds. An important division of the section is the Maudsley Hospital which is especially well adapted for the care and treatment of soldiers suffering from all forms of traumatic neurasthenia, hysteria, and the milder psychoses.

The Neurological Section of the Royal Victoria Hospital, Netley, occupies several wards in the main Hospital Building and consists of about 100 beds. It serves a most useful purpose in taking over for treatment cases which have been

sent from overseas to D Block, but which require no longer the special supervision provided there. Cases are sent also directly to the section from overseas.

The type of case observed and treated in these sections is similar. They are: Most forms of functional paralysis, especially paraplegia, disturbances of speech and articulation, amnesia or loss of memory, the effects of terrifying dreams, mutism, deafness, deaf-mutism, amblyopia, "bent-back," tremblings and motor agitations, tic-like movements, sleeplessness, nervous debility, indecision, loss of self-confidence, and the milder forms of neurasthenia, simple mental confusion, the anxiety psycho-neuroses, and simple mental depression.

The treatment adopted consists chiefly of rest and feeding; massage and electrical applications in suitable cases; baths when these seem indicated; and psychotherapy in the form of simple suggestion and occasional hypnosis.

In a general way the results of treatment at the Fourth London General Hospital show 40 per cent. of cases returned to light duty, 20 per cent. invalided, and 20 per cent. transferred for further treatment to the special institutions.

2. *The Special Institutions—the Red Cross Military Hospital, Maghull, and the Springfield War Hospital.*—Both these hospitals are constructed on somewhat similar lines in that they are provided with single rooms and special accommodation for cases requiring isolation and supervision in addition to day rooms and dormitories. The Maghull Military Hospital had not been used for the treatment of patients before it was taken over by the War Office, but the Springfield War Hospital had been employed as a hospital for defective children for about ten years.

The available accommodation in the two hospitals amounts to about 550 beds. No case is admitted directly from overseas to either of these institutions, as all cases have received a course of treatment at one of the Military Hospitals at home before transference. The patients most suitable for treatment in these institutions are cases of neurasthenia of a severe or protracted character, the milder psychoses, such as simple melancholia and the anxiety psychoses, psychoses with obsessions and fears, profound amnesia, epilepsy, high-grade mental defectives, the milder types of primary dementia, and all cases of a functional character which do not lend themselves to treatment in a general hospital.

Treatment is conducted upon general lines, rest, feeding, indoor and out-door recreation, and massage in suitable cases. At the Maghull Military Hospital a form of psycho-analysis has been used with benefit in selected cases. The results of treatment at Maghull show about 40 per cent. of cases returned to light duty.

3. *The Mental Hospitals—Napsbury War Hospital and Dykebar War Hospital, N.B.*—These hospitals receive the majority of their patients from D Block, Netley; but Napsbury admits mental cases also from military hospitals in the Southern Command and the Midland counties; Dykebar admits also from military hospitals in the Scottish Command and the northern counties. The Napsbury War Hospital is the hospital section of the parent asylum; Dykebar is one of the most recent of the Scottish asylums built upon the villa pattern. The available accommodation in the two hospitals is about 700 beds.

The patients transferred to these hospitals are of a certifiable type and include most of the severe forms of acute mental disorder—the confusional psychoses, mania, the graver melancholias, acute delusional and hallucinatory psychoses, dementia præcox, mental deficiency with confusion, general paralysis of the insane, and epilepsy with mental symptoms. In accordance with accepted policy, none of the patients in these hospitals is certified as a person of unsound mind. Each patient is given a reasonable period of treatment with a view to recovery. In consequence, however, of the accumulation of chronic and incurable cases which was observed a few months ago, it was decided to board and discharge to asylums all cases of general paralysis of the insane, of epilepsy with insanity, and all patients who had been in asylums prior to enlistment. A certain number of chronic cases also are boarded and discharged to asylums if no improvement is recorded after a fair and reasonable period of observation and treatment.

It is obvious from the nature of the disorders that the percentage of cases returned to light duty must be small, but the figures from the Napsbury War Hospital show from 10 to 15 per cent. of cases discharged to light duty.

CONGESTION IN THE TREATMENT OF CASES OF EPIDEMIC CEREBRO-SPINAL MENINGITIS.

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THE treatment advocated in this short paper is simple and does not interfere with concurrent treatment. Congestion of the cerebral vessels is brought about by raising the foot of the bed not simply on the usual ward blocks, but on stools or lockers, so that the bed and the patient's body, no pillow being allowed, make an angle of from 14° to 23° with the floor. That the method influences the course of the disease profoundly will be gathered from a study of the five cases reported.

Everyone who has treated this disease can call to mind cases which seemed to all but get over the illness, but became chronic and died. It was in this type of case that treatment by congestion was at first tried, later congestion was found useful in the earlier stages of the disease. The histories of the first five cases treated are given in detail.

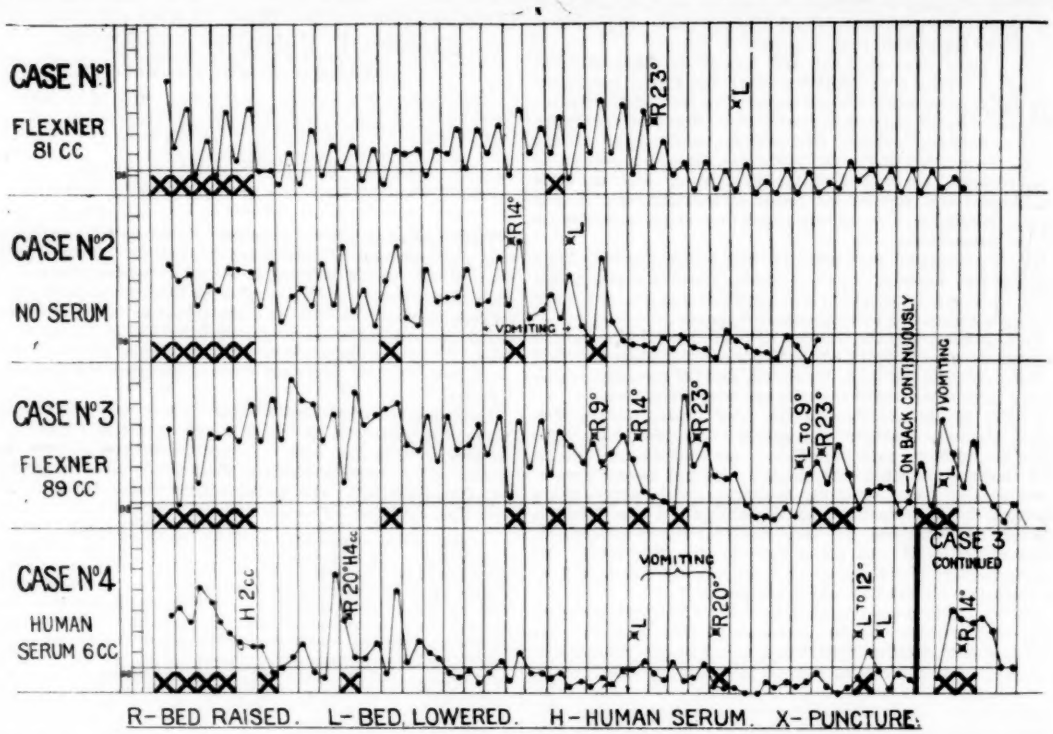
CASE 1.—Male, aged 20. The patient suffered from a mild attack of the disease and recovered some degree of forward movement of the head. Unfortunately, although he felt well, a slight stiffness of the neck persisted, his temperature was irregular, and leucocytes, chiefly lymphocytes, were present in a clear spinal fluid containing 0·1 per cent. of albumin. On the twenty-seventh day of illness, at 11 A.M. (see Chart), the lower end of the bed was raised on lockers (angle 23°). In the evening of the same day the temperature rose only to 99·6° F. and thereafter remained normal. The bed was lowered four days after the temperature had fallen to normal.

Summary.—A mild case with immediate fall of temperature and complete recovery following the raising of the foot of the bed.

CASE 2.—Male, aged 20. The patient on the eighteenth day of illness vomited, his head was retracted, and he had every appearance of becoming a chronic case (see Chart). On puncture on the nineteenth day the pressure was found to be low. The foot of the bed was raised on stools (angle 14°). There was occasional vomiting until the twenty-second day, when the patient complained of very severe headache and the bed was lowered. On the twenty-third day on puncture a hazy fluid at high pressure was withdrawn. On the twenty-fourth day the patient felt quite well, and the temperature fell to normal. On the twenty-fifth day his head was freely movable. Thereafter his recovery was uninterrupted.

Summary.—Case becoming chronic, spinal fluid at low pressure, foot of bed raised to angle of 14°; after three days congestion caused severe headache, accompanied by high pressure of the spinal fluid. On lowering of bed a rapid recovery.

CASE 3.—Male, aged 21. After three weeks' illness the patient continued to have marked neck stiffness and temperature (see Chart), and there was no diminution in the number of the diplococci in the spinal fluid. On the twenty-third day of illness the foot of the bed was raised on blocks (angle 9°). No improvement followed, so the bed was raised on stools (angle 14°) on the twenty-fifth day. The temperature fell the same evening, but there was still neck stiffness. On the twenty-seventh day, the temperature again having risen, the bed was further raised on lockers (angle 23°). The temperature gradually fell and was normal on the thirtieth day. On the thirty-first day the patient felt well and his head was freely movable. As the patient continued to feel well his bed was unfortunately lowered to blocks (angle 9°) on the thirty-third day at 10 A.M. In the evening of the same day the temperature rose to 102° F., and he had a slight headache. On the thirty-fourth day his bed was again raised on lockers. By the thirty-eighth day the temperature was normal, the patient felt well, but some stiffness of the neck remained. As the slowness of cure was attributed to the patient raising his head and lying on his side he was restrained from doing anything except lying on his back from the evening of the thirty-eighth day. His temperature rose on the following day, and on the fortieth day reached 102·2° at 6 A.M. Vomiting began at 3 A.M. on the same day, and as he could retain nothing his bed was lowered at 9 A.M. The vomiting ceased at 4 P.M. On the forty-second day the temperature was normal, and he felt well on the forty-third day, but some slight neck stiffness persisted. On the evening of the forty-fourth day, apparently



following puncture early on the same day, the temperature rose to 101·6°, and there were headache, backache, and later vomiting. On the forty-fifth day his bed was raised to 14°. By the forty-seventh day his temperature had reached normal. His bed was gradually lowered from the fifty-fifth day and the patient has remained well.

Summary.—No improvement following a slight raising of the foot of the bed, free movement of the head and a normal temperature following the raising of the bed on lockers. A relapse immediately after the too early lowering of the bed. Some improvement follows a partial application of the treatment, with a marked reaction following its stringent application; this too great congestion is followed by a rapid improvement on the lowering of the bed. A relapse follows puncture. Final recovery after a prolonged raising of the foot of the bed to angle of 14°.

CASE 4.—Male infant, aged 7 months. This was a peculiarly interesting case. Puncture alone was tried, as indicated on the chart. The spinal fluid contained large numbers of organisms, both intra- and extra-cellular. As a last resort, on the morning of the sixteenth day of illness 2 c.c. of the serum[1] of a convalescent patient were injected intrathecally. The effect was astonishing, as the infant, who had required nasal feeding, resumed taking the bottle in the afternoon and seemed much better. The temperature gradually fell and was normal on the evening of the eighteenth day. The fluid at that time was hazy and showed few diplococci as compared with the large number previously present. Unfortunately the child became worse, his colour again became bad on the nineteenth day, and he vomited. He became progressively worse until the twenty-second day of illness, when a further 4 c.c. of the serum of the same convalescent was given and the cot was left raised at an angle of 20°. On the twenty-third and twenty-fourth days there was vomiting, but on the twenty-sixth day he seemed better, and on the twenty-seventh day had a normal temperature. The child remaining quite well the cot was lowered on the thirty-sixth day at 10 A.M. At 2.30 P.M. there was vomiting. Thereafter the patient became fretful and vomited two or three times a day up to the fortieth day, when he was punctured and showed a clear fluid containing a few lymphocytes. The cot was again raised to an angle of 20° and he almost at once seemed to be better and comfortable. There was no further vomiting. The fluid being normal, the bed was lowered to blocks on the forty-seventh day, and finally lowered altogether on the forty-eighth day. The recovery was uninterrupted.

[1] The injection of 10 c.c. of human anti-serum in a later case was followed by shock and all the symptoms of anaphylaxis. The patient's condition was rendered much worse.

Summary.—A marked reduction in the number of organisms following the intrathecal injection of the serum of a convalescent. The number of organisms remain scanty but the child becomes worse. A further injection of human serum, and the end of the cot left raised is followed by a normal temperature. The lowering of the cot later leads to fretfulness and vomiting; these at once stop when the cot is again raised. Eight days later the cot is lowered and the child remains well.

CASE 5.—Male, aged 22. This patient was admitted on the second day of illness with a normal temperature. The upper end of the bed was raised to an angle of 14°. During the next few days, although the temperature remained normal and the headache became less severe, the neck was stiffer and retraction of the head developed. On the fifth day the lower end of the bed was raised to 14°. In the evening the temperature, which had remained normal, rose to 99° F. Improvement set in and continued thereafter.

Summary.—A subacute case with rise of temperature and cure following the raising of the lower end of the bed.

From a consideration of these and further cases we feel sure that the method deserves a further and more extended trial. It would appear that continued raising of the foot of the bed leads to congestion of the cerebral vessels. In mild cases in a few days a normal temperature and free movement of the head result, and the recovery is uninterrupted. In more severe cases the temperature rises and the patient more gradually recovers, the recovery being at first accompanied either or both by increased tension of cerebro-spinal fluid and a greater migration of polymorphs. If the foot of the bed has been raised too high there may be very severe headache and persistent vomiting due to a too great congestion and its results. In such cases, if the bed is lowered and the tension is relieved by puncture, the patient gradually recovers. As different cases require varying degrees of stimulation, no hard-and-fast rule can be laid down as to the height to which the foot of the bed should be raised.

Although at first this method of treatment was only tried in cases which threatened to become chronic, we recently have had good results from its application in the early stages of the disease. On admission the last two cases, after being punctured, were given morphia and the lower ends of the beds were raised on lockers during the day, being lowered or partially lowered at night. One of the patients who was admitted violently delirious recovered free movement of the neck in three days, the other, a serum-treated

case, is still ill. Whilst experience may show that it is best to raise the foot of the bed on lockers early in the disease, in more chronic cases the bed should be raised first on blocks and rapidly higher until the patient begins to show a marked reaction or a more freely movable neck. At that point heightening should stop and the patient be allowed gradually to recover, the foot of the bed being left continuously raised until some seven days after apparent recovery, and thereafter gradually lowered. Other points worthy of note are that patients should lie on their backs as much as possible during treatment, and should have no pillows. When there is marked retraction and the patient cannot lie on his back the bed should be tipped sideways and the patient's head be allowed to hang over the lower edge. This method is particularly useful for children, but as it is somewhat drastic it has not been practised for more than two hours at a time. It is always a serious mistake to puncture a patient who is progressing towards recovery, or who has apparently recovered.

This paper is in the nature of a preliminary note; its object is not only to bring to the notice of the profession a valuable method of treatment, but also to enlist its aid in finding out how the method can most usefully be applied in practice.

THE TREATMENT OF GUNSHOT WOUNDS BY PACKING WITH SALT SACS.

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THE treatment of septic wounds by a pack which is allowed to remain in the wound for several days is so opposed to the usual teachings of surgery that at first sight its utility may be doubted. Nevertheless, such treatment has proved one of the most effective methods of dealing with septic wounds during the present war. It has also been found to be one of the most generally applicable procedures for the treatment of secondary hæmorrhage. It possesses the great advantage of simplicity, an important factor when large numbers of cases require the attention of a limited staff. It also allows transport to be undertaken without any anxiety regarding the dressing of the wound.

When it is necessary to drain a wound cavity, three methods are available. The ideal method would be to expose the whole of the interior of the wound so that its walls become exposed and more or less flat. There are anatomical and surgical objections to this as a rule, but it is occasionally employed, for example, when a rectal fistula is slit up, when an amputation is performed by the guillotine method, and in certain cases of excision of wounds. Very inferior to this ideal method is the drainage of every pocket and cavity of a wound by drains. The interior of the wound is often very irregular, and it is sometimes impossible to ensure that every pocket is drained. The third method, treatment by solid salt, imitates the first or open method, by draining every portion of the surface of the interior.

The treatment of septic wounds must fulfil certain requirements. The infecting microbes must be removed by some form of lavage. The outflow of lymph must be increased. The bacterial growth must be repressed and the coagulation of the discharge must be prevented. The tissues of the wound must not be damaged either by chemical or mechanical measures. It is common ground that free exposure of the infected tissues must be made in order that adequate drainage be obtained, but many opinions are held as to the correct method of dressing the wound. These requirements may be met by the use of hypertonic solution of common salt.

It can be demonstrated experimentally that the higher the concentration of salt the greater will be its power of attracting water and albuminous substances. The "drawing" power of salt has been known for many years. Sir A. E. Wright's original lymphagogic solution consisted of a 5 per cent. solution of common salt mixed with 0·5 per cent. solution of sodium citrate. Early in the present war Sir A. E. Wright recommended the hypertonic solution of salt for the purpose of lavage and repression of the bacterial organisms of septic wounds. Colonel C. B. Lawson invented tablets of compressed salt which he placed in the lumen of drainage-tubes. Colonel Gray, C.B., originated a modification of Sir A. E. Wright's hypertonic treatment by introducing the use of solid salt in the form of tablets. The tablets wrapped in gauze formed a solution of salt.

Packing wounds with gauze impregnated with concentrated salt solution must not be confused with the plugging of wounds with ordinary dressings. Wound cavities are only potential spaces, and in order to drain them the walls must be kept apart. Ordinary drainage-tubes rarely drain every recess, and elaborate methods are required to obtain drainage from every portion of the walls and avoid the shutting off of pockets. A wound cavity filled with gauze and salt may be considered as effectively drained as if the cavity were inverted and the walls dressed as a surface wound. Every portion of the surface area is drained by the osmotic action of the salt, and the capillary action of the gauze and bandage is continually removing the discharge and producing a continuous and automatic drainage and lavage of every portion of the interior of the wound.

The tablets of salt must not come in contact with the tissue or sloughing will often ensue. The wall of the cavity must be well protected by gauze. The solid salt sac is an improvement upon the tablets. It consists of a two-walled sac of suitable size made of bandage, between the layers of which four layers of gauze are placed. The interior of the sac is filled with salt and the tail of the bandage forms a drain.

The sac is made by laying a strip of open woven bandage about a foot in length flat on the table. On this strip four layers of gauze are placed the same width as the bandage but about 4 inches in length. On top of the gauze another strip of bandage is placed. The sides of the bandage strips are then brought together by doubling the bandage in its long diameter and sewing to form a sac. The sac is filled with salt, a few stitches are put in to close the mouth. These sacs are made in several sizes, sterilised in an autoclave, and stored ready for use. One or more of them are used to pack the wound, the intervals between the sacs being filled with gauze. A tube of perforated zinc or rubber may be passed into the depth of the wound in cases of large septic wounds. Long slender sacs are made to fill bullet tracks. Small sacs are made for draining tracks in the brain. The free end of the sac is passed into a vessel containing saline solution and the wound then drains by capillary attraction. A fine rubber tube may be run in along each sac, and drip irrigation carried out if required. The salt remains undissolved for several days and when the sacs are removed from a wound at the end of a week undissolved salt still remains.

The frequency with which wounds are dressed very often depends upon empirical convention rather than on a scientific or clinical reason. Wounds are often dressed without any clear idea of the reason for removing the dressings. A dressing sticking to a wound is frequently torn off, tearing delicate granulation tissue, undoing the healing of the wound, and exposing raw surfaces for septic absorption. A more unscientific treatment cannot be imagined. In some cases it is said, the wound is dressed in order to remove the discharge. This is simply an admission that the dressing has been acting like a cork in a bottle. A rise of temperature is another reason given for removing a dressing, but if the wound is being properly treated, changing the dressing will not lower the temperature.

There are two ways of dressing a wound so that no harm is done by the changing of dressing: one is to keep a light dressing continually moist so that its removal is not felt by the patient and no tissue is damaged; the other is to leave the dressing until it is quite moist and can be removed without pain. The dressing of deep wounds is too often merely a ritual, the dressings and drainage-tubes are removed and replaced by clean ones, but the complicated series of recesses which make up the interior of most wounds cannot be reached. They may be reached by irrigation, but some portion of the wound will escape the distending effect of a drainage-tube, and the walls will fall together and a pocket will result.

The effect of the salt sac is to form a concentrated solution of salt which promotes the resolution of inflammatory induration and aids the separation of dead tissue by solution of coagulated lymph. A powerful outgoing stream of healthy lymph is produced which carries microbes and débris out of the wound and retards the bacterial growth within it. It is unnecessary and undesirable to continue the action of this hypertonic solution of salt once the wound becomes clean. If the wound is clean the sacs are removed

in from five to ten days and treatment by normal saline instituted. If the wound is foul it is either again packed with salt sacs or dressed every 48 hours with gauze soaked with 20 per cent. salt solution. When the patient's temperature remains high and his general condition is unsatisfactory it is fair to assume that a streptococcus is present. The presence of healthy lymph induced by the salt sacs does not aid in dealing with the streptococcus, but it appears probable that the most effective defence the body possesses against this organism is the white blood corpuscle. When normal saline is used the wound, hitherto bright red, becomes covered with a grey film. This is caused by the protective layer of leucocytes which act as a barrier against further invasion until the healing is completed by the ingrowth of epithelium. The hypertonic solution is therefore changed to normal saline when streptococcal infection appears probable.

The advantages of a dressing which does not require attention for seven or eight days will be obvious. The patient is saved the pain and inconvenience of frequent dressing, there is a diminished risk of secondary infection, and there is an enormous saving in material. The salt sacs have been found useful in many special instances. They were first devised for the drainage of septic wounds of the brain. Exceedingly septic wounds of the orbit with destruction to the eye have been treated by salt sacs after removing the orbital contents and removal of loose septic fragments from the bony wall of the orbit, with uniformly satisfactory results. Cases of secondary hæmorrhage associated with septic comminuted fractures of the upper part of the shaft of the femur have been packed with salt sacs. No recurrence of hæmorrhage took place and when the sacs were removed eight days later, a clean granulating wound remained. The removal of a septic foreign body, whether bullet, shell fragment, or shrapnel, is only the beginning of treatment; a septic cavity and track remain which may prove very difficult to drain and dress effectively. It has become our routine treatment simply to wash out the cavity and pack with salt sacs. The soft nature of the sacs, if they are dipped into water before insertion, makes it very easy completely to pack a cavity. The sacs accommodate themselves to the size and shape of a cavity and it is rarely necessary to add gauze to the packing. Large septic cavities associated with fracture require a drainage-tube to be inserted among the salt sacs.

The dressings become somewhat offensive at the end of a week, but the odour appears to be quite harmless. The addition of the powder eupad (hypochlorous acid) to the sacs would obviate the smell, but if the smell of the drainage causes the patient to be given what is practically open-air treatment its inconvenience will be more than compensated for.

I think it will be admitted that a method of treatment which saves the patient the pain and inconvenience of frequent dressing, which forms an efficient method of preventing hæmorrhage, and saves an enormous amount of labour and material is a good method provided its results are equal in all respects to other methods of treatment. I consider that the results are not only equal to but better than any other known method, provided the technique is properly carried out. It appears rational to add an antiseptic to the salt in foul cases, and eupad appears to be the most useful. Its addition certainly appears to do no harm in my experience, and my only reason for not using it as a routine treatment is that the plain salt gives such excellent results that it appears unnecessary. The offensive odour of the wound may in a great measure be obviated by its use. Sacs filled with eupad and salt in the proportion of one to three are destroyed in the autoclave owing to the corrosive action of the hypochlorous acid upon the fabric. A convenient method of combining the eupad with salt is to pack the wound with ordinary salt sacs sterilised in the autoclave and introduce into the middle of the sacs, without touching the wound, an unsterilised sac filled with eupad.

Six days may be said to be an average time for the sacs to remain in the wound. The temperature usually falls to normal within that period, and a rise of temperature is apt to follow dressing the wound. This rise of temperature can usually be avoided by irrigating the wound for some hours before removing the salt sacs.

The successful results of this treatment largely depend, as all treatment of septic wounds must, upon an early campaign against the sepsis and upon the thoroughness with which it is possible to remove septic and necrosed tissue.

THE ANATOMICAL POSITION OF LOCALISED FOREIGN BODIES.

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THE localisation of foreign bodies in the tissues has become a subject of the greatest importance during the present war. All kinds of improvements in detail and technique and all forms of new and elaborate apparatus have been evolved in order to produce greater accuracy in exact localisation. The result has been little short of marvellous. Given the exact position of the foreign body and its depth in the tissues, it has become comparatively easy for the surgeon to remove it with a minimum of injury to the surrounding parts and with a great reduction in the time of operation and a much smaller amount of shock to the patient. There are, however, many cases that present considerable difficulties to the surgeon even after localisation. Radiographers report that a foreign body lies at a stated depth below a certain point. The difficulty the surgeon frequently experiences is as to the anatomical position in which a certain depth will lead him. It has hitherto not been usual for the surgeon to think out his operation in inches or centimetres from the surface of the skin. He has never calculated the depth from the skin to the various underlying tissues. And if he is not assisted on this point by the radiographer his operation is sometimes not certain in its results. For instance, if a radiographer reports that a foreign body lies 9 cm. deep from a mark on the front of the thigh over the great trochanter, the surgeon wants to know if that depth is in front of or behind the great trochanter. If he knows that the average depth from the skin to the great trochanter anteriorly is 10·8 cm. and from the back 9 cm., he would be most probably accurate if he concluded that the foreign body lay just in front of the trochanter. If the foreign body were localised as 5 cm. from the skin of the back over the transverse process of the twelfth dorsal vertebra, where would the foreign body lie? In front of the transverse process or behind it? As the distance from the skin to the transverse process of the twelfth dorsal averages rather under 4 cm., the foreign body would be found in, or just anterior to, the transverse process.

The criticism of deductions of this character is, of course, that individuals vary enormously in thickness of structure. Fat, muscular tissues, and even the bones are of very different thicknesses in different individuals. There is, however, remarkable uniformity in a large number of soldiers who undergo operation in regard to these details. We must not forget that they are men taken after medical examination, largely of an average type, and after a campaign greatly standardised in bodily averages. And even in the abnormally thin or the abnormally fat a general knowledge of the average position is of great help in coming to a conclusion as to the foreign body's anatomical position.

The details we can give in this paper are only of a preliminary character. We give only some of the important positions, and especially those that have presented themselves practically to us in the routine work of military radiography. Later it may be possible to present a more comprehensive and detailed list of positions when localised. And we hope that radiographers generally will work at the subject, and by a consensus of investigation obtain further and more accurate details than we are able at present to show.

The following results have been arrived at with the use of a long needle on a handle and measuring the depth inserted when the bony point under investigation is reached. This method was supplemented by taking a double image of the various regions on one plate and estimating the depths of the bony points as for a foreign body. No attempt has been made to give positions in the leg or arm. These parts are comparatively thin, and can easily be transferred from an antero-posterior to a lateral position and foreign bodies can quickly be found. The chest, the abdomen, the pelvis, and hips are the parts presenting difficulties to the radiographer and surgeon. In the following table the results are given for the various parts examined.

INCISION.	DEPTH OF ANATOMICAL POSITION.
Head: Laterally.	
Just above zygoma.	1 in. to sphenosquamosal suture.
Just below zygoma.	1½ in. to sphenoidal bone.
To coronoid process or condyle of mandible.	1 in.
Neck: Antero-posteriorly.	
Through centre of larynx.	2 in. to body of vertebra.
1¼ in. to side of centre of larynx.	1½ in. to transverse process of cervical vertebra.
Ditto.	3 in. total depth of neck.
Through middle line of trachea just below cricoid.	1½ in. to body of vertebra.
1¼ in. to side of centre of trachea.	1½ in. to transverse process of vertebra.
From centre of suprasternal notch.	1¼ in. to posterior border of manubrium.
Neck: Laterally.	
From centre of middle of neck.	1½ in. to transverse process of vertebra.
Ditto.	2¼ in. to body of vertebra.
From just below tip of mastoid process.	2¼ in. to body of 1st cervical.
Chest: Superiorly.	
From a point midway between root of neck and tip of acromion.	2 in. to apex of pleura, downwards.
From a point midway between internal and external extremities and just behind posterior border of the clavicle.	2 in. to apex of pleura, downwards.
Chest: Anteriorly.	
From centre of lower border of clavicle backwards to subscapular fossa just clear of ribs.	3 in.
From a point just over tip of coracoid to subscapular fossa backwards.	3 in.
From a point 1 in. external to sterno-clavicular joint just below clavicle.	1½ in. to 1st rib.
Ditto.	¾ in. to pleura.
From a point 2 in. external to sterno-clavicular joint just below clavicle backwards.	1¼ in. to 1st rib.
Ditto.	1¾ in. to pleura.
From a point 2 in. below centre of clavicle.	2 in. to pleura.
Chest: Posteriorly.	
To supraspinous fossa.	1 in.
To infraspinous fossa.	¾ in.
To transverse process of 7th cervical vertebra.	1½ in.
To pleura level of 7th cervical vertebra.	2 in.
To anterior level of body of 7th cervical.	3 in.
To transverse process of 12th dorsal vertebra.	1½ in.
To pleura level of 12th dorsal vertebra.	2 in.
To anterior level of body of 12th dorsal vertebra.	3½ in.
Abdomen: Thickness of Wall from Front.	
½ in. to either side of middle line just above umbilicus.	1 in.
½ in. to either side of middle line just below umbilicus.	1½ in.
Just internal to anterior superior spine to iliac fossa.	3 in.
Midway between anterior superior spine and pubic crest to front of acetabulum.	2 in.
Abdomen: Thickness of Wall from Side.	
On level of tip of 12th rib in line upwards from anterior superior spine.	1 in.
Abdomen: Thickness of Wall from Back.	
To transverse process 3rd lumbar.	1¾ in.
To anterior level of body of 3rd lumbar.	4½ in.
To anterior level of psoas muscle.	5 in.
Hip and Thigh from Front.	
3 in. below anterior superior spine to head of femur.	2¼ in.
3 in. below anterior superior spine to neck of femur.	2-2¾ in.
6 in. below anterior superior spine (level of lesser trochanter) to front of femur.	1½ in.
To great trochanter.	4¼ in.
To lesser trochanter.	3½ in.
Brim of pelvis 1 in. in front of sacro-iliac synchondrosis.	3¾ in.
To anterior inferior spine.	1¼ in.
To spine of ischium.	5 in.
To ischial tuberosity.	5¼ in.
To anterior surface of line of junction of ascending ramus of ischium and descending ramus of pubis.	2¾ in.
Hip and Thigh from Back.	
To ischial tuberosity.	2¼ in.
To spine of sacrum on level of posterior superior spines of ilia.	1¼ in.
To sacral groove.	2 in.
To head of femur	2 in.
To great trochanter.	3¾ in.
To lesser trochanter.	3 in.
To brim of pelvis 1 in. in front of sacro-iliac synchondrosis.	4 in.
To anterior inferior spine.	6 in.
To spine of ischium.	2 in.
To posterior surface of junction of ascending ramus of ischium and descending ramus of pubis.	4½ in.

The following are examples of anatomical depths estimated from the above measurements and given to various surgeons.

1. Rifle bullet lying in wall of pericardium, the point 2 inches and the base 1½ inches from a mark on the front of the chest. Successfully and easily removed.

2. Small metallic fragment 2 inches deep to a mark on the front of the thigh on a level of the lesser trochanter, stated to be lying between adductor brevis and adductor longus. Removed without difficulty.

3. Rifle bullet, the point 1¾ inches and the base 2¼ inches deep to a mark over the scapula, stated to be in the serratus magnus. Removed from that muscle.

4. Shrapnel bullet, 1¾ inches deep to a mark on the front of the chest just below the coracoid, stated to be immediately beneath the tendon of the pectoralis minor. Removed from that position.

SIMPLE TERTIAN MALARIA IN FRENCH FLANDERS.

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To those interested in malaria Flanders and the campaign there offered from the beginning of the war an interesting series of problems. The flat, low-lying country, interspersed with canals, with the ground-water but a few inches from the surface, appeared to constitute an ideal malarial region. As a matter of fact, we know that only a century ago malaria was rife here. Whether the condition is still endemic it has been difficult to determine. Intermittent fever is spoken of, and a marsh fever is said to occur. Beyond these statements, the sources of which are not reliable, we have been unable to get any specific information. It looks as though the conditions in Flanders are very similar to those known concerning the British fen district. There ague was common a century ago, and has gradually died out, although anopheline mosquitoes are still present throughout the district. But this question of endemic malaria is of minor interest as compared with the second problem, that, namely, if similar anopheline mosquitoes be found still to exist in this district, whether the introduction into the district of large bodies of troops coming from tropical and malarial districts would result in any serious infection of the mosquitoes and in any extensive spread of the disease among hitherto uninfected troops, or among the inhabitants.

In attempting to gain an answer to this problem attention had to be given not merely to the introduction of malaria carriers into the region and the demonstration of the existence of anopheline mosquitoes, but, further, the climatic conditions had to be taken into account. It is now a familiar fact that below a certain temperature the parasites are arrested in their maturation within the stomach of the mosquito. Jancso has shown, however, that P. vivax can develop through a wide range of temperature. Granted that all other conditions were found favourable, it was a matter of distinct interest to observe whether in populations containing adult carriers and devoid of infected children the disease would spread to any serious extent. It is in relationship to these various problems that the observations here recorded may be found of interest. Having acted for four years as pathologist in a tropical country (Siam), certain regions of which are infested with malaria, I was keenly interested in observing the spread of this disease in a temperate zone.

With the arrival of certain of the troops in France there was introduced into Flanders a considerable number of individuals who harboured malaria parasites in their blood. Our records show that from the month of April to July 16th, 1915, we had examined the blood of 30 individuals for the presence of malaria parasites, and that of these five had shown the presence of plasmodium vivax. All these bloods came from the same troops. On July 19th we started the examination of a division which had been in service in a malarial country. The blood smears were taken at the field ambulances and sent to the laboratory with full notes as to previous attacks, &c. The blood of 200 individuals was thus examined, of which 93 showed the presence of P. vivax and four of L. malariæ.

These bloods were taken from individuals who presented themselves at the field ambulances with symptoms, and it is safe to presume that there were other infected persons in the division. As has already been stated, this division was recently from a malarial country. All those whose blood showed the presence of parasites, with one exception, had had previous attacks of the disease. I do not think it can be disputed that amongst certain troops there was also a considerable number of infected individuals. In April, having regard to the presence of infected humans within the area, and being aware of the fact that the troops during the latter part of the summer of 1914 had suffered to some considerable extent through the attacks of mosquitoes, a look-out was instituted for these insects. In May I saw a specimen of anopheles bifurcatus, a known malaria-carrier, which had been taken by Lieutenant-Colonel Swale Evans, I.M.S., in the corridor of a casualty clearing station within the area. On June 8th, by which time efforts were being made to establish the presence and distribution of anopheles within the area, a specimen sent to the laboratory by Captain Boyle, R.A.M.C., was identified as anopheles maculipennis, and shortly after this species, a notorious carrier, was found to be widely distributed throughout the area. It was common in billets, barns, and outhouses, and persisted till the end of September. The sylvan species, anopheles bifurcatus, was only met with occasionally.

The presence of these two carriers and especially anopheles maculipennis, considered to be of some importance when taken in conjunction with infected humans, did not lead to any great apprehension as to the possible spread of malaria amongst the troops in Flanders, as it was thought climatic conditions would be against it. The first case of malaria contracted within the area came under observation at the casualty clearing station on July 26th. The patient, a native of Scotland, had never before been out of Scotland and had never previously shown symptoms of the disease. He came into the area in the month of May. His blood showed a heavy infection with plasmodium vivax. Other cases of first infection came under observation on July 29th, August 6th (two), 21st, 27th, and 29th, Sept. 3rd, 6th, 8th, 10th, 13th, and 18th, and on Nov. 19th, making a total of 14 cases in all. The infection was in every case with P. vivax.

The patient seen on Nov. 19th came from Liverpool. He had never before been out of England and had not at any previous time shown symptoms of the disease. He arrived in France on July 21st and came into the area on August 1st. On August 16th he was billeted in a town from which we had previously seen a case of recently contracted malaria. He was in this town and its neighbourhood up to the time that he was sent to a casualty clearing station. He had his first attack on or about Oct. 1st. He showed a heavy infection with P. vivax.

Records of temperature kept in the laboratory show that in June the mean maximum temperature was about 69° F. for the month, and that the mean minimum temperature was 50°. Heavy rain fell on three occasions during the month. For the first 17 days of July the mean maximum temperature was 71°; otherwise the mean maximum temperature was approximately the same as for the month of June. The mean minimum temperature was 52°. Heavy rain fell once during the month. During August the mean maximum temperature was 71°, the mean minimum temperature 51°. There were four rain storms. From Sept. 9th to 28th the mean maximum temperature was 76°, but the difference between the maximum and minimum temperatures for that time and for the month was great. During October the temperature fell considerably.

The above details will give a rough indication of the range of temperature during which the cases under consideration became infected. Five cases occurred in August and six in September, and it would appear as if the majority of infections took place in the month of August. It is possible that some of the cases which occurred in the division previously mentioned were cases of reinfection.

Conditions in Flanders during the past summer and autumn were hardly favourable to the lengthy and robust life of individual mosquitoes, nor were temperatures constantly favourable to the development of parasites in infected insects. Nevertheless A. maculipennis of Flanders is evidently not too resistant nor yet too susceptible to convey a strain, or strains, of P. vivax, tropical or sub-tropical in origin, under the conditions that obtained.

WARFARE NEUROSES OF THE THROAT AND EAR.

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THE chief neuroses of the throat and ear met with in the present war are the following: (1) Functional aphonia; (2) mutism; (3) loss of volitional coughing; (4) functional deafness.

In functional aphonia vocal sounds are absent, the larynx is passive, but whispering, which is produced by the resonating cavities of the pharynx, mouth, and nose, remains. In mutism, both vocal and whispered speech are absent, the larynx and resonating cavities being passive, but the patient may make lip and facial movements as if attempting to speak.

Coughing, like speech, is a specialised function of the respiratory apparatus, depending for its particular qualities of sound on laryngeal and resonating cavity notes. The phonatory qualities are entirely absent after extirpation of the larynx, as coughing then resembles the sound produced by the sudden squeezing of air through the partially blocked orifice of a rubber water bottle. Coughing is partly under the control of the will and partly involuntary, the latter being a purely protective reflex act. In early life this function, like that of speech, is immature, and this probably explains why the phlegm of bronchitis is ineffectively expectorated in early infancy, except when expelled by the act of vomiting. The full power to expectorate develops with the laryngeal factor in coughing. The coughing of infancy bears somewhat the same relationship to that of later life, as the cry of the babe does to the speech of the adolescent. A typical cough can be produced by voluntary effort, although the conditions of the respiratory tract which are capable of exciting the reflex act are absent. Even when they are present, as secretion to be expelled, the typical or laryngeal qualities of the cough can be, at least partly, suppressed by central control. It is the voluntary side of the function which is absent as a neurosis, never independently of, but frequently in association with, functional aphonia.

Aphonia alone is the commonest of these neuroses, aphonia with loss of volitional cough comes next, mutism being still rarer. Deafness alone is rare, but mutism with deafness seems to be the least frequent of all.

The cases of laryngeal neuroses which came under my care were decidedly more common in the winter and spring than in the summer and autumn, and some gave a history of catarrh at the time of onset. This physical basis was still present in a few as a hyperæmia of the mucous membrane. The degree of the latter has some influence over the facility with which the voice can be restored, as the more pronounced the catarrh, the greater the difficulty in getting patients to phonate properly, because hoarseness and huskiness tend to persist for some time.

Physiology of Speech and Hearing.

Before attempting to discuss the probable factors concerned in these functional disturbances or to explain the rationale of the line of treatment adopted, I will briefly consider the physiology of speech and hearing.

Hearing as a function belongs to a different physiological category from speech. The former is classed as one of the special senses, with a specialised peripheral sense organ on a cranial nerve, whereby impressions are received and carried to the sensorium, and consequently it must be regarded in the domain of evolution as a protective function mainly. In the animal kingdom we find that certain individuals, liable to be used as prey by other more powerful species, have a particularly keen sense of hearing, which aids materially in the preservation of their existence. Hearing is also a function which appears early in the process of evolution, but the degree of its developmental activity has not continued to be augmented in the ascent, as many animals low in the scale have a more acute fundamental sense of hearing than man where sounds indicating danger are concerned.

Equilibration, which has its principal end-organ, the vestibule and semicircular canals of the labyrinth, intimately associated with, but capable of acting independently of, the cochlea or organ of hearing, is never disturbed in cases of

functional deafness. Other factors, such as the visual, tactile, and muscular senses, also contribute to the stability of equilibrium, which appears to be an essentially preservative and protective function. Hearing is also a more highly specialised function—namely, further removed from the purely reflex act, more under voluntary control, and appears later in the zoological series than that of equilibration, and is in consequence more prone to neurosis than the latter.

Speech, on the other hand, is not a special sense for the receipt of impressions, but a volitional motor function exercised by the upper portion of the respiratory apparatus for the emission of impulses originating in the sensorium. Although the power to emit laryngeal sounds exists far back in the scale of evolution, the highly complex function of speech is peculiar to man. It is represented in the cortex by a definite unilateral motor centre, which is intimately linked up by association fibres with the visual and auditory sensory centres, to form with these senses a visual and auditory word centre, the latter fulfilling the part of storehouses for the memory of speech.

Vision and hearing are in function soon after birth, but the power of speech cannot be exercised until the efferent projection fibres and the association fibres of the brain have undergone myelination and the auditory and visual word centres have stored up the memory of words. From these striking points of contrast it will be readily inferred that functions which are on the afferent paths and are primarily protective to the individual and which appear earlier in the scale of evolution and of the particular species and are not dependent upon voluntary control, are less easily disturbed in their activity than a function which is largely dependent upon will and memory and has appeared late in the zoological series.

The nearer a function approaches to a purely reflex act, intended to protect and preserve the animal existence, the less prone is it to neurosis. The reflex mechanism is very stabile and consequently is rarely affected, but it may be impaired by a considerable excess of irritation.

Causation: Rationale of Treatment.

I have already mentioned that some of my cases of aphonia had a slight physical basis, such as a laryngeal catarrh at the time of examination, or gave a history of such previous to coming under my care.

The function of a specialised organ depends upon a chain of control from the simple reflex action to the inhibitory or exciting influence of a voluntary centre. The reflex centre receives its impressions from local conditions and from its voluntary associate, but the voluntary centre receives its impressions from the special senses and from its reflex associate. Therefore, if local conditions are such as to forbid the active use of a reflex centre, the controlling centre becomes cognisant of this and tends to exercise inhibition as a natural sequence, but if at this moment the special senses convey some profound impressions to the voluntary centre the influence of the latter may be temporarily deranged. The function of the voluntary centre may also be influenced by impressions received through the special senses alone, to exercise excessive inhibition or excitation on the reflex centre. Take, for instance, the case of hydrophobia, where the mere sight of water excites spasm of the muscles concerned in swallowing. Inhibition or the loss of excitation appears to be the part played by the voluntary centre in cases of aphonia.

St Clair Thomson thinks that a reflex stimulus, when it reacts on a hysterical type, may originate an attack of aphonia. Starr, however, believes that reflex neuroses are due to defective central control and not to peripheral irritation. In my opinion, peripheral irritation may not only set up reflex stimuli which are capable of exciting inhibition of the voluntary over the reflex centre, but *vice versa*, normal stimuli to the latter centre may again induce the voluntary to exercise its proper function over its associated reflex centre. This belief underlies my reasons for adopting a certain systematic line of treatment in these functional cases, and I think it also explains the rationale of its effectiveness.

In support of this point of view let me instance the case of functional dysphagia. The act of swallowing is in three stages. The first from mouth to pharynx, the second from pharynx to œsophagus, and the third from œsophagus at cricoid cartilage to stomach. The first is purely voluntary, the second partly so, and the third is purely reflex. The usual treatment consists in carrying any instrument such as a bougie, beyond the voluntary and partly voluntary to the reflex region, the instrument then passing with ease and the power of swallowing being restored. Any foreign body other than a bougie, even food, if placed in the reflex area will pass to the stomach. This result is usually attributed to suggestion, which implies the conveyance to the centre of volition of an impression which excites the latter to active control over the function of swallowing; but I would suggest that it is the direct physical response to the excitation of associated nerve paths, whose coördination is temporarily in abeyance. The lower or reflex centre being stimulated conveys the stimulus to the higher or controlling centre and rouses the function of the latter into activity.

I am consequently of opinion that a laryngeal catarrh, as a physical basis, may have a decided influence in determining the onset of aphonia, but, of course, the latter may also, and commonly does, occur by the direct action upon the sensorium of impressions received through the special senses and by that of vision in particular, as vision is the sense by which we receive the vast majority of our sensorial impressions. I also believe that the excitation of normal laryngeal reflexes, such as involuntary coughing or retching, which are more primitive than that of speech and less prone to neurosis, will lead in cases with or without catarrh to the rapid restoration of the higher centre control, and that this is the true explanation of the cure in all the local intra- or extra-laryngeal methods of treatment.

Illustrative Cases.

The following is a summary of the cases which came under my care, 24 in all: Aphonia (alone), 17 cases; aphonia with loss of phonatory cough, 4 cases; mutism (alone), 1 case; mutism with functional deafness, 2 cases. Two cases had bullet wounds of the larynx. One case followed "gassing." Ten cases showed some laryngeal and tracheal hyperæmia. Eleven cases showed no evidence of catarrhal trouble at time of examination. Details of 7 typical cases:—

CASE 1. *Bullet wound of larynx.*—Rifleman, aged 23. When three months in France he was wounded. A bullet traversed the upper part of the thyroid cartilage. He came under my care eight months after the injury and gave a history of having lost his voice immediately and expectorated some blood at the time (indicating an intralaryngeal injury). On examination, no intralaryngeal lesion could be found, the cords approximated well on coughing but not on phonation, and he could only whisper. On using the mirror as described below, he phonated well and had a moderately good voice, but very slightly hoarse.

CASE 2. *Bullet wound of larynx.*—Corporal, aged 28. Two months previously a bullet passed through his neck. The wound of entry was in the middle line, at the upper border of the thyroid cartilage and that of exit behind the right sterno-mastoid muscle, about two inches below the point of entry. He gave a history of having lost his voice at time of injury, expectorated about a teaspoonful of blood and could only whisper since then. No intralaryngeal lesion was discernible, his cords approximated on coughing, but not on phonation. After a few minutes' treatment with the mirror he spoke perfectly.

CASE 3. "*Gassing.*"—Bombardier, aged 22. He was "gassed" at Ypres ten weeks previously and lost his voice. He had electricity applied externally to the neck five or six times since returning from France at another hospital. The cords did not approximate on coughing or phonating. First day of treatment with mirror his cough returned. Second day cough and phonation were produced. Third day he coughed and phonated well and remained well.

CASE 4. *Typical of cases with catarrh.*—Private, aged 35. Six months previously he had a cold and wheezing on the chest when in the trenches and his voice disappeared. One month previous to my seeing him he began to whisper—that is, five months after the onset of the attack. There were still some areas of hyperæmia in the larynx and trachea, his cords approximated on coughing, but not on phonation. On the use of the mirror his voice returned promptly and he could phonate well.

CASE 5. *Typical of non-catarrhal cases.*—Private, aged 21. Voice lost on returning to rest from the trenches after a period of active bombardment one month previously. He could whisper only. His cords approximated on coughing, but not on phonation. Voice returned quickly after using the mirror.

CASE 6. *Typical of mutism.*—Private, aged 20. Complete loss of speech in the trenches following the bursting of a shell some yards away ten days previously. He was not otherwise injured. He could not whisper or phonate, but made lip and face movements as if attempting to speak. The

cords approximated freely on coughing, but not at all on phonating—i.e., when requested to phonate. His voice came back in about three minutes with the use of the mirror.

CASE 7. *Typical of mutism and functional deafness combined.*—Private, aged 20. After the battle of Neuve Chapelle he lost his speech and hearing, eight days previous to coming under my care. He appeared very excited and pointed to his lips and ears, and carried a note stating that he could not speak or hear and had not done so for eight days. Without examination I came to the conclusion that his condition was probably functional, and I wrote on a piece of paper that I would restore his speech and hearing. I then used the mirror until he retched, and wrote again, "You can speak now; count up to ten loudly"; and he did so. I next used the cold-water douche to the right ear until he became giddy, and then shouted through a speaking-tube, "You can hear now?" and he replied "Yes," with tears streaming down his face. He conversed freely afterwards, but was rather emotional.

Treatment.

Once the diagnosis of a laryngeal neurosis is established, whether the case is one of aphonia alone or aphonia in combination with the loss of volitional coughing or mutism with the latter, the sole aim of treatment is first to excite involuntary coughing or surprise laryngeal sounds over which the patient has no control. If any catarrh of the larynx exists the usual treatment for this condition is applied, very special attention being paid to the influence of nasal obstruction and tonsillar or adenoid sepsis as causes of laryngitis. There is nothing new in the line of treatment adopted to restore the voice, but the systematic method of its application and the reasons for doing so, are the points which I desire to emphasise.

The patient is placed in the common position for the examination of the larynx, the tip of the tongue being seized in a piece of linen by the left-hand fingers and the laryngeal mirror introduced with the right hand. The patient is then requested to say "e" or cough, and if the cords do not approximate, they can be made to do so by using moderate friction on the fauces and pharynx with the mirror to excite secretion. The latter begins to drop into the larynx, and acting as a foreign body, a protective reflex is at once excited which adducts the cords to prevent the secretion from entering the trachea. At the same time an involuntary cough is produced to expel the mucus, and if the friction and flow of secretion are maintained and the patient is urged to cough vigorously, voluntary coughing and a tendency to retching with forced laryngeal notes will rapidly follow. It is usually best to persist until retching occurs, as the cords are then forced together to protect the larynx and trachea from the possible entrance of regurgitated stomach contents. Involuntary laryngeal sounds are thus produced and the patient is conscious of laryngeal effort. Some of these cases are at the moment very shallow breathers, which can be demonstrated by X ray screening, but the act of retching causes a wide excursion of the diaphragm with a more pronounced expiratory blast, to be rapidly followed by deeper inspirations. This method of treatment is best carried out just before a meal, as the stomach is then practically empty and the unpleasant effects of the sudden regurgitation of food are avoided. When the explosive sounds accompanying retching have occurred two or three times the mirror is withdrawn, the tongue released, and the patient is requested to swallow, take a deep breath, and cough, and then urged to count up to ten, directing his voice to a certain point on the ceiling. This method has given me uniformly good results, and was rapidly effective in all cases coming under treatment soon after the onset of the neurosis.

The treatment of functional deafness consists in exciting the vestibular apparatus as follows. Cold or hot water is allowed to flow in a steady stream into and out of the external auditory meatus by means of a tube attached to a receptacle placed about one and a half to two feet above the patient's head and continued until he becomes very giddy and an active nystagmus is produced. A speaking-tube three feet long is then used by placing the ear-piece in the ear so treated, and the surgeon shouts into the mouth-piece the assertion, "You hear now," and the answer "Yes" comes promptly. The tube is now dropped and a conversation held as if no deafness ever existed. So far I have found the treatment of one ear sufficient. The patient is usually very emotional, as the disturbed vestibular function, which in these cases responds easily and markedly, causes him to feel as uncomfortable as a bad sailor on a stormy voyage. This feeling, however, rapidly gives way to one of pleasure at the return of his hearing. Where functional deafness and mutism co-exist it does not appear to be material which is treated first. In two cases of this kind under my care I treated the loss of voice first. Some of the cases diagnosed as shell deafness are partly, if not wholly, functional, and will respond to the treatment described above.

Weymouth-street, W.

NOTES ON CASES OF HEAD, ABDOMINAL, AND JOINT INJURIES.

BY H. E. BROWN, F.R.C.S. ENG.,
LIEUTENANT (TEMP.), R.A.M.C.

THE following brief notes relate to some of my personal work from Oct. 17th to Dec. 31st, 1915. The wounded, except a small minority detained at field ambulances, usually reached the hospital within a few hours of being injured.

Head Injuries.

Wounds limited to the soft parts were excised completely and sutured. By this method sepsis was eradicated with certainty, the period of convalescence was shortened, and the condition of the skull beneath ascertained. All these cases when discharged had healed by primary union.

In wounds with injury to the bone the soft tissues, including the pericranium, were excised. Two cases presented only a staining of the external table. This stained area was removed by chisel and mallet. Five cases showed grooves of the external table with no evidence of brain injury. In two cases the grooved bone was removed by chisel, and in three cases the trephine was used. All healed by first intention, excepting one case in which a shell fragment had removed a large piece of the scalp and tissues.

A number of cases of fracture of both tables without laceration of the dura mater were treated. The fractures belonged to the gutter or fissured types with varying degrees of depression. In those cases with elastic dura and cerebral pulsation the operation ended with the removal of bone and suturing of the scalp, a drain being provided at one angle of the wound. The cases (13) were kept for a minimum period of seven days. Union took place by first intention; there were no deaths.

The cases with laceration of the dura were treated as above with the addition of excision of the edge of the dural opening and its enlargement if indicated. Driven-in fragments of bone were removed. In one case with established sepsis (a Turkish prisoner found in "no man's land" three days after being wounded), a soft drain was placed in the injured brain area. In this class of 19 cases 10 were fatal. A large proportion were "hopeless" on admission, death taking place a few hours later. They were "cleaned up" only. In five cases the scalp wound was sutured and a drain was inserted; one died within two days; three were discharged to hospital ship in apparently a satisfactory condition; the fifth presented a fluctuating swelling beneath a perfectly healed scar, with no inflammatory signs. Semi-fluid, like disintegrated brain matter, was evacuated by reopening part of the wound, and the after-progress was uneventful.

Abdominal Cases.

Eight cases of abdominal wounds and two cases of perforating typhoid ulcers were operated upon. Five cases of the first class and one of the second were fatal. All the wounds were due to grenade, shrapnel, or shell (none to rifle bullets).

CASE 1.—Private; grenade bomb wound. Entrance wound in the right eighth intercostal space, mid-axillary line; exit in left upper abdomen, grooving costal cartilage. Admitted 24 hours after being wounded. There were signs of bleeding, fluid in the peritoneal cavity, and peritonitis. The exit wound was excised, blood evacuated, and a tube inserted down to the wound of the liver; there was no active hæmorrhage at time of operation; the small bowel was distended and congested. A pelvic tube was placed through a supra-pubic incision. The after-progress was complicated by right basal pleuro-pneumonia. Satisfactory progress was reported from England.

CASE 2.—Lance-corporal; multiple grenade wounds of limbs and chest. There was a history on admission of abdominal pain for three days. Whilst, on account of this pain, waiting for a stretcher was wounded by a grenade, and the pain became intensified and changed its character. On admission the abdomen was rigid and tender, especially over the gall-bladder. On laparotomy, blood was found in the peritoneal cavity with bile in the neighbourhood of the bile-ducts. A small metallic fragment was found lying near the junction of the cystic and hepatic ducts; a drain was inserted down to the ducts. The abdominal wound healed without trouble, but there was sepsis of the limb wounds. A basal pleuro-pneumonia acting on an originally enfeebled physique proved fatal.

CASE 3.—Private; grenade wounds of spine (slight symptoms) and abdomen. Admitted 24 hours after being wounded. There was a hyperæsthetic rigid abdomen, with signs of fluid, constant vomiting, and frequent desire to pass urine. A catheter was passed, and a few drachms of clear urine were drawn off. On laparotomy the peritoneal cavity was full of blood; there were large wounds of the upper jejunum, with fouling of the peritoneum. The intestinal wounds were sutured and the peritoneal cavity cleansed. Drainage-tubes were inserted down to the wounds in the bowel and in the pelvis. No wounds of the urinary apparatus were found. After-progress: Vomiting continued for 36 hours and then ceased. There was no secretion of urine for 48 hours; then urine was passed per urethram and by the upper abdominal tube. The suppression of urine was accompanied by symptoms of uræmia. There was persistent diarrhœa. Death took place 72 hours after operation.

CASE 4.—Shrapnel wound of abdomen. The general condition was bad. On laparotomy 11 large perforations of the ileum were found. Resection of bowel was done, Paul's tubes being used; lateral anastomosis was performed a few days later. Death occurred five days after the second operation. Immediate anastomosis would probably have saved this case.

CASE 5.—Multiple grenade wounds, including the liver. Patient admitted with marked symptoms of bleeding. On laparotomy a large lacerated wound of the right side of the liver was found with much blood in the peritoneal cavity. The wound was plugged. The patient failed to rally, death taking place ten hours later.

CASE 6.—Shell wound of abdomen. Laparotomy was performed and a medium-sized perforated wound of the small bowel was sutured, the pelvis being drained. After-progress was uneventful.

CASE 7.—Lieutenant; shell wound of abdomen. On laparotomy seven perforations of the small bowel were found. Double resection was done, drains being inserted down to the anastomosis and in the pelvis. After-progress was uneventful, and the patient was discharged to England three weeks after leaving ——.

CASE 8.—Shell wound of abdomen. Laparotomy revealed a perforation of the stomach and hæmorrhage from the cœliac axis. The perforations were sutured. Death ensued 12 hours later.

In all these cases the wounds were of such a nature that recovery without operation was an apparent impossibility.

Perforating typhoid ulcers.—Both cases were typical and the diagnosis was made certain only by laparotomy. Each patient had had two antityphoid inoculations. Tests for paratyphoid A and B were not made. In one case the affected bowel was intensely inflamed, swollen, and sodden, and the perforation was sutured with difficulty. Death took place 17 days later. At the necropsy the perforation was securely closed, a near-by ulcer had nearly perforated, and there was a general peritonitis partly loculated. The other case was of a milder character. The perforation was closed and the after-progress was uneventful.

Wounds of Joints.

In simple wounds with bleeding into the synovial cavity but with probably no marked "fouling" of the joint cavity the wounds were excised down to the capsule. The joint was irrigated with saline and 5 c.c. of 10 per cent. solution of iodoform in ether were injected. In cases complicated by comminution of the bones entering into the formation of the joint, the wounds of the soft parts were excised as thoroughly as possible. Loose fragments of bone were removed, and the wounds were irrigated with weak carbolic or biniodide followed by saline. The injured bone received special attention, and "fouled" areas were removed. Drainage-tubes were inserted down to the capsule with separate drainage for the injured bone area. The results in cases of simple wounds were uniformly satisfactory; in those of a severe type the results were also good so far as they could be traced.

Clinical Notes:

MEDICAL, SURGICAL, OBSTETRICAL, AND THERAPEUTICAL.

THE ODOUR OF PAINT AS A CAUSE OF PLUMBISM.

BY H. H. MOYLE, M.R.C.S., L.R.C.P. LOND.

I BELIEVE few cases of this form of lead poisoning have been known and recorded, and I am somewhat reluctant to commit myself to the above title, yet being fully alive to the very great difficulty sometimes met in detecting the source of the poisoning I cannot but help feeling that the following cases are definitely due to the smell of paint only. The following is the history.

A man, his wife, and child occupied a cottage of two living and two bedrooms, all small, which early in October, 1915, was papered inside and thoroughly painted inside and outside, extending over about three weeks, the occupants living in the house as usual. The smell was commented upon at the time to one of the painters, eliciting the remark of "cheap tack and war time." At the end of November the man came to me complaining of vague pains in abdomen, nausea, and feeling of discomfort after food which at the time I treated for dyspepsia with bismuth, &c., with relief. Some days later I was called to see the wife, who was suffering from abdominal pains. On entering the house the smell of paint was most noticeable.

On examination of the woman nothing definite could be made out. Temperature and pulse normal, and she being of a somewhat neurotic temperament I decided that a little pain had been exaggerated and would be relieved if the bowels were opened. The same evening I was again called to see her. The abdominal pains were worse, and perhaps referred to region of gall-bladder more than another, yet they were more or less vague. No history of a previous jaundice, and the appendix had been removed about 18 months before. Temperature 99° F; pulse normal. Satisfied that there was no acute abdominal condition present I left haustus tr. opii ½ dr. for her. I saw the husband at same time, found he had not been so well and had stayed in bed.

On the following day the woman's pains were decidedly better. Temperature and pulse normal. On examination of her mouth the teeth and gums were in excellent condition except for three—viz., upper canine and two lower bicuspids. The gums opposite these showed a definite blue line. I immediately examined the man's mouth and found a well-marked blue line not only on the gums, but on cheeks and lips which came into contact with gum margin.

The cases presented the ordinary symptoms of lead poisoning, that of the man being more severe than the woman. Now as to source of poisoning. Occupation: The man does not come into contact with lead at all, while the woman in addition to her household work looks after railway crossing gates. Water-supply: Examination negative as to lead. Other fluids: Wife teetotal, man teetotal except for occasional glass of cider. Food: Negative to direct contact. Fuel: Wood (unpainted) and coal. Usual china cups and plates, and nickel spoons, forks, &c.

As already remarked, the paint smelt very strongly and was rather sticky to the touch, even eight weeks after painting. I found the food had been kept in a small unventilated cupboard. With regard to actual contact with the paint by hands, this might occur in going upstairs to steady oneself (there being no hand-rail) by means of touching a wall and partition. Otherwise there was no reason to touch any painted surface. In the bedroom the bed was close up to the walls at foot, head, and one side. Two windows I have reason to believe were rarely opened.

In support of my title one knows that the illness caused by inhalation of paint odours is usually due to lead hydroxide acting on the oils and driers in the paint liberating deleterious aldehydes, and Murrell says: "Sleeping in a freshly painted room has been known to cause lead poisoning." I think that these two cases, living in a strong atmosphere of paint, and especially at night being so close to recently painted walls, certainly were the victims of plumbism from a rather unusual source. It seems, therefore, that a poor drying paint (? cheap), especially with deficient ventilation, may cause this illness, and more particularly amongst those who occupy small rooms, and are thus brought into more intimate contact.

Henstridge, Somerset.

DIABETES INSIPIDUS DEVELOPING SUDDENLY, WITH UTERINE FIBROIDS; HYSTERECTOMY.

BY JAMES OLIVER, M.D.EDIN., F.R.S.E.,
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THE occurrence of diabetes insipidus in the adult female is a rare event, and its sudden development in association with any extreme tension created by a neoplasm in the pelvis or elsewhere has seldom been observed.

The patient was a woman, aged 44 years, who had been married 16 years and had never been pregnant. She was menstruating regularly, and the discharge, which invariably lasted seven days, had always been excessive. Quite suddenly, four weeks before coming under my observation, the patient developed an insatiable thirst, and noted at the same time an inordinately frequent desire to pass urine. The first menstruation which occurred after the aforesaid disturbances was unusually painful, and it was the pain experienced at that period which induced the patient to seek immediate advice. The following physical signs were then noted. Examination of the abdomen even on deep pressure detected nothing abnormal. Per vaginam the cervix was located far back; it was not enlarged and the os was not open. In front of the cervix the vaginal roof was pushed markedly down by a small globular swelling of about the size of an orange. To the right of the cervix was an irregular extension of the uterus. The uterus, which was about five times its normal size, was practically immovable due to the location anteriorly and laterally of fibroids in its substance. During the first 24 hours of the patient's stay in hospital she passed 259 ounces of colourless urine, the specific gravity of which was just 1000. As I considered it injudicious to subject the patient to hysterectomy with urine passed equalling that of distilled water I decided to watch her for a week or longer if necessary. I prescribed for her a pill containing oxide of zinc and valerianate of zinc (2 grains of each), and this pill was taken three times a day. As the quantity of urine passed during the succeeding four days did not diminish and the specific gravity was still that of distilled water, I discontinued the pill and prescribed chloride of calcium in 10-gr. doses three times a day. Two days after starting the chloride of calcium the quantity of urine fell to 116 ounces and the specific gravity rose to 1004. The chloride of calcium was continued for eight days longer before operative interference was decided upon, and during those days the quantity of urine never exceeded 100 ounces and the specific gravity varied from 1004 to 1010. The urine never contained any albumin.

Operation.—Hysterectomy was performed. The operation was difficult because the uterus could not be brought up even into the abdominal wound until the fibroid located anteriorly had been enucleated from its bed and until the right broad ligament had been severed down to the pelvic floor. Both ovaries had to be removed with the uterus. The quantity of urine passed during the three weeks after the operation varied from 80 to 100 ounces, and the specific gravity kept steadily about 1004. The patient progressed satisfactorily, and when she left the hospital she was passing from 50 to 60 ounces of urine daily, the specific gravity of which was from 1005 to 1007.

Harley-street, W.

CASE OF ACUTE TETANUS WITH HÆMATEMESIS.

BY VIVIAN M. MÉTIVIER, M.R.C.S., L.R.C.P.LOND.

I AM indebted to Dr. J. B. Cook, medical superintendent of Isleworth Infirmary, for his kind permission to publish the notes of this case.

Patient admitted to infirmary on Feb. 22nd at 9 P.M. On Feb. 11th, while scrubbing steps a splinter of wood entered deeply under her right thumbnail. On the 19th she had pain and stiffness in her back and neck, which became more severe on the 20th, the sharp attacks of pain making her cry out. The unusual way the symptoms set in led to the wrong diagnosis of hysteria. On the 21st the mouth was opened with great difficulty. On admission the typical symptoms of tetanus were present. Opisthotonos not severe, but spasms came on every four minutes. The teeth could be separated sufficiently to give food. Full doses of chloral and bromides, and subcutaneous injections of morph. tart., gr. ¼, and 10 c.c. of 15 per cent. mag. sulph. solution were given statim. The wound in the thumb, which on opening up appeared healthy, was thoroughly cleaned and dressed.

Feb. 23rd: Patient slept for short intervals from 1 to 3.30 A.M. Spasms about every 20 minutes. After full dose of chloral at 3.30 A.M. she slept for longer intervals, and from 7.30 to mid-day sleep was fairly sound and only interrupted with spasms, when she was disturbed. Retention of urine made necessary catheterisation eight-hourly. At 1.30 P.M. spasms began to be troublesome again, and at 3.30 P.M. were more severe, coming on every five minutes. Antitoxin (B. W. and Co.), 1500 units, was given intrathecally under chloroform, also 7 c.c. of 15 per cent. mag. sulph. solution. Patient vomited curdled milk in afternoon. At 7.30 P.M. subcutaneous injection of 2 per cent. carbolic (10 minims) repeated eight-hourly. Vomiting continued, and patient was put on diluted peptonised milk; vomiting ceased in evening. At 9 P.M., under chloroform, an attempt to inject antitoxin into nerve sheaths in right ante-cubital fossa was not very successful, the greater part of 1500 units being injected into the tissues exposed. Full doses of chloral and bromides given at 11.15 P.M. During the night frequent spasms, and she did not sleep.

Feb. 24th: At 8 A.M. patient was sleeping and improved again. Menstruation started and continued throughout. 1500 units antitoxin and 10 c.c. mag. sulph. solution subcutaneously. She was quieter towards afternoon; teeth could be more widely separated. Slept from 6 to 9 P.M. Spasms now returned and gradually increased in frequency. At 10 P.M. full doses of chloral and bromides. She was fairly comfortable from midnight to 3 A.M. Feb. 25th: Spasms every 20 minutes during early morning. Chloral and bromides in full doses at 6 A.M. At 10 A.M. much less rigidity; mouth could be opened voluntarily. During day 2500 units antitoxin subcutaneously. Only 20 ounces of urine secreted in 24 hours. Bowels remained confined since the 23rd, in spite of enemata. Brownish fluid like beef-tea vomited in afternoon. Calomel 3 gr. given in small doses followed by saline aperient. Muscles of neck and back less rigid. Vomiting continued throughout evening, becoming darker in colour, with small lumps, and of "coffee-ground" character. No bleeding from tongue or gums. Adrenalin chloride (1 in 1000) one drachm in two ounces of iced water was given by mouth at 10.30 P.M., and patient put on modified Lenhartz diet. At midnight she became very collapsed—rapid, thready pulse, and cold extremities. Normal saline with 2 per cent. glucose solution started per rectum, foot of bed raised, and patient kept warm with hot-water bottles. Digitalin gr. 1/100 hypodermically.

Feb. 26th: Vomiting continued in early hours of morning. Adrenalin chloride repeated at 4.45 A.M. At 5.30 A.M. hypodermic injection of morphine and atropine. Vomiting ceased soon after. At 10 A.M. she was improving; pulse fuller and stronger. No spasms throughout the night. The teeth could be still more widely separated. The whole of the back touched the bed, and the neck was slightly bent forward on the pillow. Two very slight spasms during the day. Patient had had no chloral or bromides since the 25th, 6 A.M. Antitoxin, carbolic, and mag. sulph. injections discontinued. Ten ounces of urine withdrawn in 24 hours. Towards evening pulse became more feeble again; no vomiting. Rectal saline was recommenced. Pulse gradually became imperceptible. Digitalin and pituitary extract were given subcutaneously. Towards 6 A.M. on the 27th she became unconscious, passed into a state of coma, and died soon after.

Necropsy.—The stomach contained about eight ounces of altered blood and fluid, and the small intestines blackish-brown fluid in large quantities. The mucous membrane of first part of duodenum was of a dark black colour over two areas—one the size of a shilling and another a little larger, and more irregular. This change appeared to be due to hæmorrhage into the mucous and submucous tissues. There was no sloughing or ulceration. The mucous membrane of the stomach showed deeply injected areas with prominent bright red capillaries varying in size from a contracted to a dilated pupil. One larger patch, about as large as a sixpence, appeared somewhat like a piece of skin deprived of its uppermost layers for a Thiersch graft.

Brentford Union Infirmary, Isleworth, W.

DEVON AND CORNWALL SANATORIUM FOR CONSUMPTIVES, DIDSWORTHY, AND KING EDWARD VII. MEMORIAL DISPENSARY.—The annual meeting of the friends of this institution was held on May 19th. The report showed that the charity had now 70 beds, 40 for men, 30 for women. The daily average number of patients was 60. During the year of the patients admitted 114 were in the first stage of the disease, 123 in the second, and 35 in the third stage. The committee had given the first call on beds to tubercular sailors and soldiers. The London Hospital Sunday Fund had subscribed £875, and ten beds were reserved for cases from London hospitals. 1200 patients had been treated at the dispensary since it was opened in 1910.

Medical Societies.

ROYAL SOCIETY OF MEDICINE.

SECTION OF OBSTETRICS AND GYNÆCOLOGY.

Primary Cancer of the Fallopian Tube (with an Exhibition of Specimens).—Unilateral Solid Primary Adenoma of the Ovary.—Pneumo-peritoneum.

A MEETING of this section was held on May 4th, Dr. M. HANDFIELD-JONES, the President, being in the chair.

Dr. HERBERT SPENCER read a short communication on a fourth case[1] of Primary Cancer of the Fallopian Tube. The tumour was removed, together with the uterus (which contained an adeno-myoma and a small myoma) and a simple ovarian cyst with which the ostium of the tube communicated (tubo-ovarian cyst). The cancer occurred in the ampulla of the tube, to which it was confined. The growth was a carcinoma resembling in many places a sarcoma. Extensive keratinisation was present. Sections were shown demonstrating the origin of the cancer from the epithelium of the tubal plicæ. The growth recurred in the pelvic colon, a piece of which was excised and an end-to-end anastomosis made. The growth again recurred and was not influenced by X ray treatment. The sequence of events in the development of the cancer in this case appeared to be (1) salpingitis with simple invasion of the muscular wall by tubal glands; (2) papilloma; and (3) malignant invasion of the wall by glands, the epithelium of the glands and of the papilloma becoming proliferated to form cancer.—Dr. H. RUSSELL ANDREWS showed a specimen of Bilateral Carcinoma of the Fallopian Tube. The patient, aged 55, had been married twice, but was childless. The menopause occurred at the age of 49. In December, 1914, she began to have a discharge of blood, and later the discharge "turned to pure water." She said that she had lost as much as a quart a day. She was admitted to the London Hospital in March, 1916. The profuse watery discharge was thought to suggest the presence of carcinoma of a Fallopian tube. The abdomen was opened and both tubes were found to be greatly dilated, the left forming a mass 6 by 2½ inches, and the right 4 by 2 inches. The uterus was atrophic, and showed nothing abnormal. The cavity of the right tube was almost filled by papillary growth; the left contained a good deal of similar growth, but was not so tightly filled. Dr. Andrews considered that the growth was a papillary carcinoma, but thought that there might be some discussion as to whether it should not be called a papilloma, and suggested that the specimen should be referred to the Pathological Committee.—Lady BARRETT showed a specimen of Primary Squamous-celled Carcinoma arising in a tuberculous Fallopian tube. The patient, aged 46, married nine years, sterile, had complained of pain in the right iliac fossa for 10 years. There was a hard, well-defined tumour in the right side of the lower abdomen. On vaginal examination Douglas's pouch and both lateral fornices were found filled up by the swelling. The uterus and both tubes and ovaries were removed. The right tube showed very extensive tuberculous disease. The left tube was lined by tuberculous granulation tissue, and towards the outer end there was squamous-celled carcinoma with keratinisation and a few cell nests. There was no carcinoma in the uterus, and numerous sections of the ovaries failed to show the presence of dermoid tissue.—Dr. CUTHBERT LOCKYER showed a specimen of precancerous changes seen in the displaced epithelium of nodular salpingitis.—The following remarks by Mr. ALBAN DORAN were read by the Senior Secretary: "Having read the records of later cases of cancer of the Fallopian tube with much interest, I have come to the conclusion that primary cancer is the rule—a statement I would not have dared to make in 1888, when I described the first case under my personal observation. The malignancy of tubal cancer is of a very high degree, even after the most modern and radical operations, yet after-histories rarely include any suggestion of a primary seat other than the tube. How comes it, if according to some authorities tubal cancer is always secondary, that the primary disease happens to be always latent when a tube is amputated for carcinoma? Do we often meet with such a pathological phenomenon in the case of the breast or tongue? The Wells-Bickersteth case of papilloma teaches us that a new growth of a type which later experience has shown to be very liable to malignant degeneration may be absolutely confined to the Fallopian tube. When such degeneration occurs the tube must of necessity be the primary seat of carcinoma."—Dr. HEYWOOD SMITH asked Dr. Spencer with regard to the first case he had narrated whether, if the oviducts had been opened at once and had been found malignant, and if, therefore, the other one had been removed, in his opinion it would have given the woman a better chance, or was it another case where a woman had neglected to realise the importance of abdominal symptoms?—Dr. F. J. MCCANN discussed Dr. Andrews's specimen.—Dr. SPENCER and Dr. ANDREWS replied.

Dr. HENRY BRIGGS read a paper on Unilateral Solid Primary Adenoma of the Ovary. The recognition of a benign solid glandular growth—an adenoma—as a rare primary tumour of the ovary was the main purpose of this communication.

Mr. J. D. MALCOLM related a second case of Pneumo-peritoneum probably induced by the bacillus aerogenes capsulatus.

[1] The three earlier cases were published in the Journal of Obstetrics and Gynæcology of the British Empire, 1910.

MEDICO-PSYCHOLOGICAL ASSOCIATION OF GREAT BRITAIN AND IRELAND.

Experimental Toxic Lesions in the Rabbit's Brain and Their Bearing on the Genesis of Acquired Idiocy and Imbecility in Man.

A quarterly meeting of this association was held at the rooms of the Medical Society of London on May 16th, Lieutenant-Colonel DAVID G. THOMSON, the President, being in the chair.

Two papers upon the above subject were read, one by Dr. David Orr (Prestwich) and the other by Major R. G. Rows, R.A.M.C. (Maghull, Liverpool).

Dr. ORR said this communication was a continuation of the experimental work of his colleague and himself on the action of the bacterial poisons on the nervous system, the conclusions of which they briefly reviewed. In the former work the induced toxic action was studied in the spinal cord only, and in the present series the research had been extended to the brain, a capsule containing staphylococcus aureus having been placed in contact with the common carotid artery in the neck. The positive results so far obtained helped to explain the pathogenesis of certain obscure lesions of the central nervous system which were found in man. Rabbits were used for experiment, and two types of lesion had been observed up to the present: first, coagulation necrosis of the nerve cells in the cornu ammonis—the histology of which was carefully described—and in the more superficial layers of the cerebral cortex; secondly, there was a softening in the stratum moleculare of the cornu ammonis. The changes in the cerebral cortex it was proposed to make the subject of a further communication. The alterations seen as the result of the poison were typically those of coagulation necrosis. The neuroglia participated actively in the inflammatory reaction, and around the area of softening there was found to be much neuroglial proliferation and hypertrophy. There was a high degree of proliferation of the adventitia of the small vessels in the immediate vicinity of the softening. The research showed that the two factors, degree and situation, could produce dissimilar pathological results, although the pathogenesis was the same. Applying this to clinical neurology it became evident that certain nervous syndromes, though widely different in symptomatology, were pathogenetically, one and the same disease, the different symptomatology being largely due to the anatomical site of the lesion. The experiments also shed light on the genesis of the infantile cerebropathies, which were now regarded as due to toxi-infections of medium intensity contracted between the fifth and the eighth month of fœtal life, or, more rarely, in early infancy. The paper was illustrated by lantern slides.

Major ROWS drew attention to some of the problems connected with the vegetative system, which included both the sympathetic and autonomic systems. Under the term "vegetative nervous system" were included all the fibres which go to the organs having smooth muscles, such as intestines, blood-vessels, glands, ducts,

and skin, as well as the nerve structures exerting a secretory influence upon glands; it also embraced certain organs with cross striated muscles, such as the heart, the beginning and the end of the alimentary canal, and the muscles of the genital apparatus. Anastomoses were common among the nerve fibres of the vegetative system. This system also had a much more independent action, and it reacted to drugs in an altogether different manner; indeed, it was from the latter that so much had been learned about it. A sort of balance seemed to be maintained between the autonomic and the sympathetic systems, so that one assumed an exaggerated action if the influence of the other were interfered with. Both systems were much affected by the secretions of various endocrinic glands. Dr. Orr and he had demonstrated that changes could be produced both in the vegetative system and in the central nervous system by placing a capsule containing pathogenic organisms in the neck, near the carotid artery, or in the abdominal cavity; and they suggested that the disturbances in this system were closely connected with the origin of the lesion in the central nervous system, a view which was supported by clinical evidence, instances of which were given. Major Rows spoke of the importance of investigating the emotions from the biological side. In conclusion, he said that medical men would probably learn much if, instead of separating the brain from the spinal cord, and the latter from the vegetative system, in their investigations, they would regard the nervous system more as a whole, and appreciate more fully to what extent a disturbance in one portion might interfere with the functional activity of the remainder.

Reviews and Notices of Books.

Bernhardi and Creation: A New Theory of Evolution.

By Sir JAMES CRICHTON-BROWNE, M.D., D.Sc., LL.D., F.R.S. Glasgow: James Maclehose and Sons. 1916. Pp. 72. Price 1*s.* net.

Sir James Crichton-Browne starts by finding that the war has caused a rude shock to science in that her finest discoveries and best energies have been requisitioned not for the saving or the adornment of human life but for its destruction. He proceeds to make hay of the theory that war is justified on the Darwinian or *struggle-for-existence* principle, pointing out that Bernhardi when taking up this view regards varieties as species, forgetting the physiological unity of the one and the ethnological diversity of the other. But while war is a reproach to science, he finds it to be a great stimulus to religious thought, and he expects that our present trials will prove a stimulus to the growth of altruistic feeling which has already been a characteristic of the civilised nations during the last century. "The war," he pleads, "has in some ways fanned the sparks of religion and brightened them into flame. With no return to mediæval superstition, there is a widespread realisation of the supernatural ..... a feeling that we cannot stop at the Sermon on the Mount, but must ascend to the Incarnation. At home there has been a quickening belief in the spiritual life, and men and women who doubted it before have felt its inrush in prayer, not mere mechanical mumbling: and in moments of patriotic exaltation or of profound solitude, in hours of intense anxiety or poignant sorrow." Sir James Crichton-Browne's essay is eloquent and inspiring.

Chemical Constitution and Physiological Action.

By Professor Dr. LEOPOLD SPIEGEL. Translated with additions from the German by C. LUEDEKING, Ph.D. Leipsic, and A. C. BOYLSTON, A.M. Harvard. London: Constable and Co., Limited. 1915. Pp. 155. Price 5*s.* net.

THE profusion of synthetics, while somewhat bewildering, has been largely responsible for remarkable development of knowledge as to the relation of chemical constitution to physiological action. This is demonstrated in the evolution of organic arsenic molecules which now find application in the treatment of syphilis. Progress has been made easier by the facility with which organic compounds can be modified by substituting fresh groups or giving the same groups different positions in the molecule. This small volume deals with such questions, and, as might have been anticipated, the subject-matter relates chiefly to organic compounds, only 24 pages out of a total of 155 being allotted to inorganic compounds. It amounts to an instructive study of certain groupings which furnish the preliminary basis for certain effects. We learn, for example, how the physiological action of compounds can be modified, weakened, or strengthened by the action of individual side-chains, and a very clear account is given of the present position of the relationships of chemical constitution to physiological action, so far as the investigations have been pushed. The further study of the subject promises interesting developments.

Experimental Organic Chemistry.

By JAMES F. NORRIS, Ph.D., Professor of Chemistry in Vanderbilt University. London and New York: McGraw-Hill Book Company, Inc. 1915. Pp. 215. Price 5*s.* 3*d.* net.

A VERY useful and instructive set of experiments is here outlined and the practical directions given evidence a familiarity with successful laboratory manipulations. The directions cover a wide range of compounds, and yet the book is convenient in size and the type is bold and clear. The opening chapter on laboratory methods is one of the most useful in the book and prepares the student for the subsequent practical work described. It is not often easy to obtain organic compounds in a pure state, or in many instances in good crystalline form, but the author is careful to instruct his readers on those important details which when followed give satisfactory results. The book can be strongly recommended to all those who require a sound knowledge of technique and analytical operations connected with the chemistry of the carbon compounds.

LIBRARY TABLE.

An Irishwoman in China. By Mrs. DE BURGH DALY. London: T. Werner Laurie, Limited. Pp. 294. Price 10*s.* 6*d.* net.—This interesting book is exactly what it purports to be—a simple record of the life of ordinary European residents in China. No doubt such residents may have no very deep knowledge of the history, the psychology, or the racial aspirations and developments of the Chinese. But living among them, and feeling friendly towards them, they get an insight into their domestic manners and ideals which in this case has prompted the production of a book. "An Irishwoman in China" will be of more interest to ordinary people than many works written by experts in history or sociology, and Mrs. De Burgh Daly's chatty pages (if she will forgive the adjective) are well illustrated by photographic reproductions.

The Other Side of the Lantern. By Sir FREDERICK TREVES, Bart., G.C.V.O., C.B., LL.D. London, New York, Toronto, and Melbourne: Cassell and Co., Limited. Pp. 424. Price 2*s.* 6*d.* net.—This is a cheap issue of Sir Frederick Treves's well-known book of travels. The first part gives the author's experiences in the Mediterranean and the Red Sea, the second his impressions of India, the third describes Burmah and Ceylon, the fourth and fifth China and Japan respectively, and the sixth deals briefly with his journey home across America. The sections devoted to India and Japan are the longest, and the former is full of anecdotes illustrating the history and life of the empire. The book has been reprinted many times, and we welcome its appearance in cheap form. The itinerary was neither novel nor adventurous, but the simple record makes instructive reading.

Bussaco: Its Monastery, Battle, and Woods, and its Uses as a Health Resort. By Dr. D. G. DALGADO, of the Academy of Sciences of Lisbon. With two plans and a map. Lisbon: Torres and C.ta 70–74, Rua Nova do Almada. 1916. Pp. 116. Price 2*s.* 6*d.* net.—Dr. Dalgado, who has written some popular books on the climatology of Portugal and the merits of its health resorts, has added to the series an account of Bussaco (sometimes spelt Buçaco), celebrated alike for its ecclesiastical and secular history, and its magnificent woods. Dr. Dalgado claims that the place is "justly reputed as the best inland sylvan resort of low altitude in the whole of the Iberian Peninsula." He devotes a chapter to each of its prominent features, describing the monastery of the monks, the invasion of Portugal by the French and the battle of Bussaco in 1810, the fauna and flora of the neighbourhood, and, lastly, the uses of the thermal waters in cases where high altitudes are contra-indicated.

THE LANCET.

LONDON: SATURDAY, MAY 27, 1916.

Military Service Bill: The Position of Medical Practitioners.

THE Military Service Bill, which is to receive the Royal assent this week, now contains a provision of significance to medical men, and, we think, of great value both to the military authorities and the public at large. On the motion of Lord SANDHURST, on Monday in the House of Lords, the following clause was inserted in the Bill:—

"Regulations made under the second schedule to the principal Act shall provide for the establishment of professional committees to deal with claims for exemption made by duly qualified medical practitioners; and any application made by such a medical practitioner on any ground, other than that of conscientious objection, for a certificate of exemption shall be referred by the tribunal to whom it is made to such a committee in accordance with those regulations; and the recommendation of the committee on the application shall be binding on any tribunal constituted under the principal Act."

The meaning of this clause will be perfectly clear to all our readers, and its insertion accords directly with the course which we have on several occasions suggested might be adopted. Under the scheme of voluntary enrolment a very large body of men pledged themselves to accept commissions in the Royal Army Medical Corps, or, if preferred, in the Royal Naval Medical Service, and to come up if their services should be required. But at the same time a considerable number who might have been expected to enrol abstained from doing so. In some cases exemption from compulsory service has been obtained by practitioners from local tribunals, and it was widely felt that it would have been more satisfactory to the public, to the military authorities, and to the medical men who had enrolled, if the arguments for exemption had been produced to a professional body. It is extremely difficult for any except medical men, who have actual experience of medical practice in its various branches, to decide whether a man best serves the public and the army by remaining in civil practice or by accepting a commission. The difficulties in such cases follow no general plan, and where one man is the master of his fate another will be so in the hands of circumstances that he must obtain assistance before he can venture to enrol. Localities, again, vary in their supply of medical practitioners and in their demand for medical service. It is obvious that the countryside requires a larger percentage of medical men to population than the urban district, because of the time that must be spent, not in visiting the sick, but in traversing the distances between their homes; but, inside this broad differentiation, every locality will have its peculiarities which can only be fully known perhaps to local residents, and their significance can certainly only be appreciated by those who are familiar with the exigencies of medical practice in its various forms. The institution of professional committees to choose which men shall, and which men shall not, be selected for commissions is, we venture to think, a thoroughly wise move. The machinery is in existence and, indeed, has already been working in the indicated direction. We have every reason to hope that by its energies an adequate supply of medical officers will be found for the navy and army, and that they will be chosen with the minimum hardship to the practitioners accepting commissions and with the maximum regard for the wants of the localities. When it was first mooted that application for exemption from compulsory service by a qualified medical man should be made to some professional body more able to consider the problems involved than any tribunal of laymen could possibly be, the objection was raised that it would be difficult to grant privileges to one professional class rather than to another. In the House of Commons, on the consideration of the Lords' amendments, several members took this line, but their arguments had no real force, for the medical man is the only man who is wanted exactly as he is, and who can be taken straight from civilian work, given a commission, and accepted directly into the scheme of a fleet or an army on active service. The public and the Government have seen the justice of this view, and the institution of professional committees has followed.

We learn that the War Office has decided to recognise, under the regulations to be made in fulfilment of the new clause, the three existing professional Committees—viz., the Central Medical War Committee, the Committee of Reference of the Royal College of Physicians of London and the Royal College of Surgeons of England, and the Scottish Medical Service Emergency Committee. These bodies have for some time been utilised by the Government in arranging for the selection of medical men for service as doctors in the naval and military forces of the Crown, and in connexion with the work of the Central Tribunal. The Scottish Medical Service Emergency Committee possesses a detailed knowledge of the medical men coming within its sphere of work which the English body with its larger scope can, perhaps, not claim, but Local War Committees have been established throughout England and Wales in connexion with the Central Medical War Committee, and the work of these numerous bodies has grown in efficiency as the members have become familiar with the problems before them. The Committee of Reference appointed by the Royal Colleges will have referred to it the cases of medical men on the staffs, residential and teaching, of the hospitals and medical schools of London, and any other cases which the Army Council or the Central Medical War Committee may think desirable. We understand that an Order in Council, under the new clause, with the Regulations, will be issued at once.

The Work of the Liquor Control Board.

AMONGST the many painful lessons which we have had to learn during the past two years one of the most obvious, and also one of the most valuable, is the danger of neglecting to deal effectively in time of peace with social evils which in time of war may constitute a grave peril to national efficiency. In a specially clear and forcible manner this lesson has been taught with regard to the drink question, where the problems involved have been under almost constant discussion for many years. Their seriousness from the point of view of the energy and health of the community has been generally recognised; but, nevertheless, no real effort has been made to think out and to carry into effect any complete and reasoned scheme for their solution. The very dangerous consequences of this remissness were apparent at the outbreak of the war, especially in the industrial centres, and it was then speedily realised that what had been postponed in the leisurely days of peace would have to be attempted, if only in a partial and provisional way, in all the turmoil of national emergency. Such conditions are hardly favourable to the successful handling of a complex social problem; and it is, therefore, the more gratifying to find that the methods adopted to meet the special circumstances of the crisis were based on sound principles, for they have been attended with excellent results. These are clearly indicated in the recently published Report of the Central Control Board (Liquor Traffic).

In considering the work of the Control Board it is necessary, as the report points out, to bear in mind that the Act from which the Board derives its authority does not operate automatically for the whole kingdom, or, indeed, for any part of it, until an Order in Council has been made with regard to that part; and it has further to be noted that the object of the Act is to promote the successful prosecution of the war. In accordance with these principles, the Act can only be applied to naval or military centres or to localities where munitions of war are being produced or dealt with in transit, and only when it can be shown that the special measures which it authorises are expedient for the purpose of increasing war efficiency. These limitations led to a very partial use of the Act during the first few months of the Board's existence, but with the rapid development of the military resources of the country, and as a result of the encouraging experience of the value of restrictive regulations, more and more areas have been scheduled, until at the present moment the Act is in force over nearly the whole of Great Britain. While certain drawbacks may be presumed to have attended this gradual and tentative method of dealing with the problem, there were important compensating advantages in the closer adaptation of the Orders to the special circumstances of individual districts, and, above all, in the opportunities which were in this way afforded for judging the effect of new and more or less experimental regulations. The policy of the Board has been fully justified by its results, whether these results are measured by such statistical data as are available or are estimated by the considered judgment of responsible public authorities. Thus, in each area of England and Wales where the Orders of the Board have operated, there has been a most notable decline in convictions for drunkenness. To take a single instance, in the Liverpool area, where the weekly average of such convictions in the first six months of 1915 was 238, and during the four weeks preceding the Board's Order 225, the numbers fell in the following four weeks to an average of 123, and in the first eight weeks of 1916 stood at 128. And reports from the chief constables of the scheduled areas are unanimous in asserting that these figures represent a real diminution in the amount of excessive drinking, as evidenced, *inter alia*, by the marked decrease in the frequency of such minor offences as are ordinarily associated with drunkenness. The same view is emphatically expressed by the naval and military authorities, by Board of Trade officials at the larger ports, and by employers of labour. The evidence furnished by employers, to which the Report draws special attention, goes to show that the work being done in shipyards and munition factories is advanced in two ways by the Orders of the Board. Where bad time-keeping had obtained, the restrictions on the sale of drink have effected improvement in this as in other respects, with a consequent increase of output. Where time-keeping was good before the issue of the Order, industrial efficiency has been in many cases increased and the quality of the work done has been notably better. The later opening of public-houses appears to exercise an important influence in this direction, to judge from the special reference that is made in several reports to the better condition of the men when coming to work. This is a very encouraging fact, as pointing to a decrease in the early morning drinking which is so large a factor in the development of industrial alcoholism. The special restrictions on the sale of spirits seem also to have given good results, though suggestions have been made in some quarters that they may have led to an increase in home drinking. Similar allegations have been made, of course, with regard to the effect of the restrictive regulations as a whole, but they are hardly consistent with the evidence of increased sobriety to which we have just referred, nor do they harmonise very well with the statements, made by the same critics, that these regulations are doing serious and irreparable injury to the liquor trade. So far as any opinion on the matter can be formed as yet, it would appear that the restrictive Orders are attaining their aim, that they are discouraging excessive drinking and drinking at irregular times, while not interfering with the moderate use of alcoholic beverages at meals and after working hours.

The activity of the Control Board has not, however, been confined to purely restrictive measures. On the contrary, it has been from the first a cardinal principle of their policy to recognise that alcoholism must be combated, not merely by limiting the facilities for excessive drinking, but also by

removing the causes of such drinking. Prominent amongst these is the lack of adequate provision of wholesome and palatable refreshment, particularly in working-class districts. To meet this difficulty the Board have used their influence, wherever possible, to encourage the improvement of public-houses in scheduled areas, and they have assisted employers and philanthropic societies in the provision of canteens at which good meals can be obtained at a low charge. In two instances the Board have themselves established industrial canteens. Further—and this is to be noted as of special importance—in certain districts they have taken direct control of the sale and supply of intoxicating liquors. This experiment in the State management of public-houses will be watched with the keenest interest by the steadily growing majority of social reformers who recognise that the drink problem can only be solved by modifying the conditions which lead to the abuse of alcohol, and not by attempting to prevent its reasonable use. The saner view demands that the public-house, instead of being regarded as a mere drinking-shop and a place of more or less evil resort, should be reorganised so as to fulfil more adequately the function which it has exercised in the past as an important centre of the social life of the people. Such a reorganisation can only be effected satisfactorily under some system of disinterested control; and, having regard to the exceptional importance of the liquor trade from the point of view of the public health and security, it is clearly desirable that the controlling authority should be in the hands of the State. If the experience of the Control Board should eventually lead them to advocate this policy, there can be little doubt as to its prompt acceptance by public opinion. Whatever else the war has done, it has shown that the problem of alcoholism must be dealt with thoroughly and resolutely, and that its solution cannot be any longer delayed either by heated prohibitionists or interested traders.

LITERARY INTELLIGENCE.—Messrs. Hilton and Co., Calcutta, have in preparation a new edition of Ghosh's "Materia Medica," edited by Lieutenant-Colonel B. H. Deare, I.M.S.; and of Ghosh and Das's "Hygiene."

NOTIFICATION FEES AND THE ACTION OF THE BRITISH MEDICAL ASSOCIATION.—Mr. N. Bishop Harman has sent us for publication a letter from Dr. F. J. Smith on behalf of the Marylebone Division of the British Medical Association, and his reply to this letter. Dr. Smith asks whether it is true that the deputation from the Association to the Local Government Board admitted that 1s. would be a sufficient fee for the notification of infectious diseases. Unless the answer is the negative he gives notice of raising the question at the annual meeting. Mr. Harman replies in the negative. He states that at their interview with the Government representatives the deputation took up a definite and unassailable stand against the statement of the Retrenchment Committee that the filling of a notification form involved no more than "clerical labour worth one shilling." The deputation pointed out that serious responsibility was involved, and one that laid the doctor open to an action at law in case of a real or alleged error on his part. In the case of the notification of measles the same heavy responsibility did not hold, and as the fee was already on a different basis the Government might logically claim to treat it separately.

Annotations.

"Ne quid nimis."

INCIDENCE OF NOTIFIABLE INFECTIOUS DISEASE IN 1915.

THE incidence of notifiable infectious disease in each sanitary district in England and Wales during the year 1915 is noted and discussed in a report[1] by Dr. Arthur Newsholme, principal medical officer to the Local Government Board. It will be remembered that at the time of the recent Census agreement was reached between the General Register Office and the Local Government Board for the adoption of a common system of statistical returns based on the substitution of administrative for registration districts. One of the results was that in 1911 each of these departments instituted an amended series of reports in relation to infectious diseases. Dr. Newsholme's report reminds us that, in the absence of existing powers for the purpose, the circulation of notification returns has been effected under a "General Order" of the Local Government Board, which imposes upon medical officers of health the duty of transmitting to the Board a statement of the number of infectious attacks reported under the Notification Act during the preceding week. In the course of the week following that to which the summary relates a weekly summary of these returns, giving the cases reported in each sanitary area, is sent by the Board to every contributing health officer. The present systematic interchange of weekly returns is obviously helpful to medical officers of health, especially in widespread rural districts. They are thus informed respecting the occurrence of infectious disease in the several parts of the area for which they are responsible, and are also promptly warned of the approach of infection from contiguous districts under other authorities. As in previous reports, the number of notified cases and the rates per 1000 of population are given in the tables. The populations of many of the districts are very small. Consequently, although for convenience of reference the rates are always given, it is necessary, in judging of their significance in each instance, that the size of the population and the number of cases occurring should be borne in mind. The sickness returns for 1915 are commendably complete; they indicate that a considerable proportion of the cases were imported from abroad, the sanitary areas containing the ports being on that account specially exposed to danger. The seasonal incidence of the more important diseases is set forth in tabular form, special seasonal excess above the mean for the year being expressly noted. During the year 90 small-pox cases were reported (in some cases erroneously); 31 attacks were returned from towns connected with ports. Typhus fever was notified in 45 instances, 37 of which were returned as imported cases by Liverpool. Scarlet fever was less prevalent than in the preceding years. Only in three weeks of October did the attacks exceed the average; they were relatively most numerous in London and least so in the English rural districts. Enteric fever was less prevalent than in any year of the previous four. In nine instances paratyphoid was notified. The county boroughs of Wales were

[1] Reports to the Local Government Board on Public Health and Medical Subjects. New Series. No. 109. London: Wymans. Pp. 57. Price 9d.

exceptionally free from enteric fever. Cerebro-spinal fever showed inordinate prevalence, the attacks being above the average in successive weeks from the middle of February to the end of May. Of the total cases 624 were reported in London, 695 in county boroughs, 787 in smaller urban districts, and 452 in rural areas. Acute poliomyelitis was notified in 517 instances, the attacks being slightly fewer than in the preceding year, and decidedly fewer than in 1913. In proportion to population the smaller boroughs and the rural districts appear to have suffered most and the county boroughs least. In consequence of the further increase in the naval and military forces and of the local concentration of troops in 1915, many notifications of military and naval infectious cases have been sent to civil medical officers of health. These are not included in the returns of the several sanitary areas, but are set forth in a separate table for England and Wales as a whole. This table shows that in the course of the year there were notified to the local sanitary authorities, as occurring in the naval and military services, 1998 cases of scarlet fever, 1183 of diphtheria, 594 of enteric fever, 264 of erysipelas, 930 of cerebro-spinal fever, and 580 of tuberculosis.

THE HISTOLOGY OF DISSEMINATED SCLEROSIS.

Disseminated sclerosis is, next to tabes dorsalis, probably the commonest disease attacking the spinal cord. It is, of course, more than a cord disease, yet in the majority of instances the earliest symptoms whereby it betrays itself are referable to involvement of the medulla spinalis. The histopathology of tabes and its pathogenesis have been definitely determined and solved, whereas the mystery of disseminated sclerosis remains. In a preliminary communication to the Pathological Society of Great Britain and Ireland in July, 1910, the late Dr. Alexander Bruce, of Edinburgh, with Dr. J. W. Dawson, neurological histologist to the Royal College of Physicians' Laboratory, Edinburgh, suggested that disseminated sclerosis was a toxi-infective disease, showed that the plaques were deposited in relation to the distribution of the veins and to the walls of the ventricles, and held that the infiltration was along the lymphatic channels surrounding the veins. The investigation initiated in this fashion by Dr. Alexander Bruce has been continued by Dr. Dawson, and the Transactions of the Royal Society of Edinburgh (Vol. L., Part III., No. 18) contain the finished results. It is a truly superb monograph, of about 220 pages of text, with no fewer than 456 microphotographs and coloured drawings. No such magnificent contribution to the problem of disseminated sclerosis has hitherto appeared in any language; from the histological standpoint it is, so to speak, the last word, and we are satisfied after a careful perusal that as far as histological methods are concerned it is impossible to expect any further results by their employment. Yet Dr. Dawson is candid enough to admit that the actual nature of the disease is still undetermined. In his researches he has made it clear that the sequence of the pathological processes in the disease is somewhat as follows: (1) a commencing degeneration of the myelin sheath and a simultaneous reaction of the glia in the immediately adjacent perivascular tissue; (2) an increasing glia-cell proliferation and a commencing fat-granule-cell formation; (3) the stage of so-called "fat-granule-cell myelitis"; (4) a commencing glia-fibril formation; (5) an advancing and (6) a complete sclerosis. Histological study has given overwhelming evidence that sclerotic areas in the disease arise on the basis of this evolution through a stage of fat-granule-cell formation, and Dr. Dawson concludes that the underlying process is a subacute disseminated encephalo-myelitis which terminates in disseminated areas of actual and complete sclerosis. There is much to favour the view that true disseminated sclerosis is due to a specific morbid agent; other diffuse affections of the central nervous system (arterio-sclerosis, syphilis, acute encephalo-myelitic processes) may give rise to a clinical symptom-complex very like that of disseminated sclerosis; they differ, however, in the characteristic remissions and relapses. According to Dr. Dawson, the anatomical expression of these remissions must naturally be the gradual clearing up of the cell exudation and a sclerosing of the tissue with a retention of the axis-cylinders. All who are interested in the problem of the disease will, of course, ask themselves the question: What is the nature of this postulated specific morbid agent which is the final and determining factor in the process? It is impracticable in a brief annotation to refer to all the arguments adduced by the author; suffice it to say that he feels there is no adequate evidence to distinguish between a microbial and a toxic agent; so far as it goes, the evidence favours the latter hypothesis. How it is conveyed to the nervous system is another of the difficult problems of the disease; in spite of the frequently marked periventricular sclerosis, and recent experimental evidence in favour of the toxicity of the cerebro-spinal fluid, which point to a lymphogenous spread, Dr. Dawson concludes that his own work does not support that view, and states, therefore, that "the causal agent is probably of the nature of a soluble toxin, and it is conveyed to the nervous tissues probably by the blood channel." Why is the action of this postulated toxin restricted to certain areas? The suggestion made is that the restriction is in some way related to the selective action of the toxin in certain areas of the blood-supply, or that unknown factors determine an irregularly distributed paralytic dilatation, with an increased infiltration through the vessel walls. Remissions and relapses necessitate the assumption of the latent presence of the morbid agent in the body—either the intermittent evolution of a toxin, or its accumulation from deficient elimination. A short analysis of the monograph gives but a poor idea of the wealth of material, clinical and pathological, which it contains: the discussions of the problems of the disease are full, critical, and temperate; the work of other observers is constantly referred to, and there is a valuable bibliography. Dr. Dawson's conclusions are put forward modestly and reasonably, and his last sentences may be quoted: "Approximately final answers can, therefore, be given to the questions relating to the nature of the process underlying disseminated sclerosis, to its origin, to the relation of several secondary etiological factors, and to certain aspects of the mode of action of the final causal agent. We are, however, still quite in the dark concerning the nature of this final cause, which determines, anatomically, a process so well defined, and one without any close analogy; and, clinically, a disease which, however variable the symptoms, conceals its characteristic course only temporarily. ..... All that is most important, therefore, still remains for future investigations along bacteriological, serological, and experimental lines, which have recently done so

much to clear up the etiology of other affections of the central nervous system." The research which the late Dr. Bruce initiated, and which Dr. Dawson has so ably carried out, is a monument to tireless industry and patient analysis; it is a splendid contribution to the subject and supplies fresh proof of the very high standard of British neurology.

JAPANESE CHARMS AND AMULETS.

SATAN in the Middle Ages was often conceived of as a fool, who might be deceived by saints endowed with the wisdom of the serpent. He could be frightened away from a house over the doorway of which a holy object or form of words had been suspended, and from the human frame his onslaughts and those of his myrmidons, the evil spirits, might be averted by the use of necklaces or other charms. The same principle is still at work to-day in folk-medicine all the world over, though the spirits whom it is sought to deceive, avert, or exorcise are more often physical than moral tormentors. In Japan the nursery is still protected from the inroads of measles and other infections by means of an inscription over the nursery door stating with the exquisite urbanity characteristic of our far Eastern Allies that "this child is not at home." As often as not the inscription accompanies a true amulet ("hamalet," Arabic for something suspended), which may either represent the absent child (who is really at home all the time) or some spirit more terrible than the unseen visitor. In the Wellcome Historical Medical Museum a most fascinating exhibition is on view, illustrative of "Japanese charms, amulets, votive offerings, and objects of medical interest," among which these nursery notices occupy an important place. One of the exhibits, for instance, is the inky impress of a child's little hand on rice paper, with words to the effect that its owner is gone away, and another delightful one is the carapace of a crab, painted with a horrid face, fit to terrify the devil himself, and accompanied by the same message. Akin to these notices are the charms embodied as toys. A yellow tiger with a wagging head is now said to be a toy, but anciently it was a form of exorcism against palsy and numbness of the limbs. It is a question, indeed, whether in rural Japan, away from European influences, this pictorial tiger is not still used to combat functional paralysis—in our own remote villages analogous charms to ward off evil are in constant use, to the despair or the amusement of the educationist. Dyspeptics of the old school in Japan still place "the beckoning cat" beside them while they eat their curry or raw fish and rice. The cat sits on its hind legs, as cats do, but beckons amiably with a front paw, which is curled over its left eyebrow. Thus it has the power of drawing Acidity, a very terrible demon, out of the eater's body. Mere modern atheists tend to regard the beckoning cat as a mascot to be set up in a shop, like the decorated phallus set up in a less reputable *locale*, in order to draw custom. The moderns aver that the cat is a toy, but the Old Knowledge knows better. A war, indeed, seems to be covertly raging in Japan between the old-fashioned users of amulets and the exponents of the modern spirit. The moderns make out that amulets are toys. Thus the goodly "large coloured toy" called Inu-Hariko, just as Thor's club was called Miolnur, is now described as "a ceremonial present." This is a crimson animal like an elephant, on the back of which are tied a wisp of hemp and a drum-rattle. Pregnancy charms are in great evidence in the Wellcome collection. A picture of Jisu, who resembles Buddha, is to be carried to facilitate childbirth, and among a set of charms for an enceinte woman is a strip of coloured paper to be worn in the pregnancy girdle. This last is known all the world over, and was familiar to the Greeks and Romans. The nuns of a convent in France at this day are said to send to pupils from their school about to be mothers a gay ribbon, inscribed with a prayer, which will ease the pangs of labour. Military amulets are akin to pregnancy charms. The Belt of a Thousand Stitches, each of which must have been put in by a separate sempstress, was worn by a soldier in the Russo-Japanese War, who came through many battles unscathed. Akin to this, again, is the joint of bamboo, pierced with 100 holes, to keep away the hundred-day cough (whooping-cough). The medical portion of this Japanese collection contains some 70 exhibits, from the bulb and stem of garlic, to be hung above doors to avert infections, to the coins which prevent bed-sores when put secretly into a bed, or the "Dosha powder" which relaxes corpses. We suggest to those of our readers who are interested in ethnology, and especially the ancient medical learning, that they should inspect the collection.

SEPTIC PNEUMONIA.

SEPTIC pneumonia—the broncho-pneumonia due to aspiration of septic matter and particles of food in cases of paralysis and coma—is far from uncommon, but has not received much attention or systematic description. In the *Medical Journal of Australia* of March 4th Dr. W. F. Litchfield has published an important paper on the subject based on cases observed in diphtheria and brain diseases associated with coma and after general anæsthesia. He analysed the post-mortem findings in 59 cases of pharyngo-laryngeal diphtheria. In 27 death was due to asphyxia from extension of the membrane into the smaller bronchi. In 9 there was blocking of the air-passages combined with pneumonic patches in the lungs. In 15 death was due to extensive pneumonic consolidation without any membranous formation in the bronchi. In the last group there was membrane more or less detached in the pharynx, larynx, and upper part of the trachea, but without any blocking of the air-passages. In both lungs was extensive consolidation. The pneumonic areas were patchy but often massive. There might be massive consolidation in one lobe with smaller areas in the other lobes. Usually there was purulent bronchitis. In some cases the appearance resembled that of lobar pneumonia. In several cases the pleural surfaces were coated with lymph, and in one case there was pus in the pleural cavity. Microscopically, the chief feature was leucocytic infiltration of the air vesicles. The microbes found in the lungs were chiefly staphylococci and diplococci. In a few cases the diphtheria bacillus was also found. In none of the cases was there any deglutition paralysis. In several cases it was noticed that the membrane overhanging the larynx was in a dirty broken-up condition. This supported the view that the pneumonia was a septic process due to the inhalation of septic particles, which was borne out by the distribution of the pneumonic patches and the bacteriological findings. Dr. Litchfield also analysed the notes of 200 necropsies made by

him at the Royal Prince Alfred Hospital, Sydney, and found that there were 25 cases of acute brain disease. Of these 8 showed well-marked broncho-pneumonia in association with purulent bronchitis. His last observations relate to pneumonia occurring immediately after operations under general anæsthesia. The records of the necropsies at the hospital during 1914–15 showed 8 cases. In several of them the pneumonia was of a scattered type and associated with purulent bronchitis. The three groups of cases have in common a diminished sensibility of the throat and larynx and a depression of the coughing reflex. Further, in many of the cases the muscular apparatus of respiration was embarrassed and in the majority the respiration was oral, with the result that the secretion became inspissated. All these factors contribute to the inhalation of septic particles. The danger is increased when there is a septic or inflammatory condition of the mouth and throat. Septic pneumonia may occur, though less commonly, apart from the conditions mentioned. The indications are to cleanse the throat and mouth, open-air treatment, free stimulation, and sinapisms to the chest wall. But the chief interest lies in prophylaxis. There are many reasons why the mouth should be kept free from sepsis, and these are increased in soporific and paralytic conditions. During any acute illness the mouth and throat should be cleansed frequently and thoroughly. If there is any septic state of the mouth the treatment should be more assiduous, and if the illness be one of those mentioned above the danger of septic pneumonia should be borne in mind. It may be necessary to syringe the pharynx or the nasal passages several times a day. With regard to operations, the advantage of light anæsthesia, which preserves the cough reflex to some extent, and of spinal and local anæsthesia over general anæsthesia, is obvious.

ACCIDENTAL POISONING BY LEAD.

IN another column we publish a note by Mr. H. H. Moyle on "The Odour of Paint as a Cause of Plumbism." He records the cases of a man and his wife who both exhibited symptoms of chronic poisoning by lead. They had been living in a house which had been papered inside and thoroughly painted inside and outside, the whole process extending over about three weeks. The possible sources of poisoning were duly investigated. The man's occupation did not bring him into contact with lead; the examination of the water-supply was negative; both the patients were of temperate habits, and the eating and drinking utensils consisted of the usual china cups and plates and nickel spoons and forks. The paint was apparently of inferior quality, and smelt very strongly and was rather sticky to the touch even eight weeks after being applied. Mr. Moyle admits that he is reluctant to commit himself to the title of his paper, but failing to trace the symptoms to any cause he expresses the opinion that this man and woman, living in a strong atmosphere of paint, especially at night being so close to recently painted walls, were the victims of plumbism from a rather unusual source. In 1852 Dr. J. Alderson mentioned in THE LANCET[1] several cases in which colic and paralysis occurred in persons subjected to the smell of paint; and Sir Thomas Stevenson[2] referred to instances in which these symptoms were noticed in persons who had slept in newly painted rooms. It is difficult to understand, however, how lead could obtain admission into the system in this manner, considering that it is only capable of volatilisation at a high temperature. The number of cases in which cooking utensils have been found to be at fault would indicate a thorough examination of such before a definite conclusion was arrived at that the smell of paint only was the cause of the poisoning. The glaze on cooking utensils may be the source of the trouble. Professor Glaister records two cases in which the cause was a cracked frying-pan, the cracks in which had been soldered with lead, which had been partly dissolved by the fat of ham. Mr. Moyle does not state whether the cooking utensils had been carefully investigated. Nevertheless, his communication is an interesting one as demonstrating the difficulties which may arise in attempting to trace the source of the poison when symptoms of plumbism present themselves.

[1] THE LANCET, vol. ii., 1852, p. 391.
[2] "On Poisons," second edition, p. 485.

TREATMENT OF SYPHILIS: THE GIFT OF THE GROCERS' COMPANY TO THE LONDON HOSPITAL.

THE International Medical Congress of 1913 and the appointment of a Royal Commission to inquire into venereal diseases focussed public attention on the treatment of these conditions in a remarkable way, and the issue of a sensible report has confirmed the interest now being manifested. A valuable step towards the better provision of opportunities for treatment was taken in February, 1914, when the Grocers' Company offered to defray the cost of building and equipping a ward at the London Hospital for the treatment of syphilis. It was then determined by the authorities to add another floor to the existing isolation block of the hospital, and this step, owing to structural difficulties in the work, cost £10,000. The building was delayed on account of the war, but was completed by the end of 1915. Financial stringency led to a decision to delay opening the ward until the end of the war, but owing to the great increase in the number of patients presenting themselves for treatment the House Committee found it necessary to open the new department on March 1st last, the ward being worked in connexion with the skin department of the London Hospital, as it is intended at first to make special study of the treatment of syphilis in the acutely infective stages. The ward, which is admirably constructed, contains eight beds for men and eight for women, all the patients being in separate rooms. A well-equipped laboratory for clinical investigation, together with bathrooms and suitable accommodation for nurses, makes the whole building a model for its purpose.

ON Thursday, June 22nd, at 4.30 P.M., the Royal Society's Croonian Lecture will be delivered by Professor S. J. Hickson, F.R.S., on "Evolution and Symmetry in the Order of the Sea-pens."

THE Cavendish lecture of the West London Medico-Chirurgical Society will be delivered on Friday, June 23rd, by Sir John Bland-Sutton, at the West London Hospital.

THE Regius Professorship of Surgery in Dublin University, left vacant by the death of Sir Charles Ball, has been filled by the appointment of Mr. Edward H. Taylor, M.D. Dub., F.R.C.S. Irel., professor of surgery in Trinity College, Dublin.

NOTES ON CAMP SANITATION.

BY ADAM WHITE, M.B., CH.B., D.T.M. & H. EDIN., D.P.H. CAMB.,
CAPTAIN, R.A.M.C. (T.F.); OFFICER COMMANDING SANITARY SECTION.

IT has been suggested that it would be useful if the articles on Sanitation in Billets and Camps contained in THE LANCET of Jan. 1st and 8th, 1916, were supplemented by reference to some matters relating to camp sanitation which were touched upon only briefly or not mentioned at all in those communications. The following notes are intended to act as the supplement alluded to above. The points to be dealt with relate mostly to hutment camps.

Floor and Cubic Space.

The provision of adequate floor and cubic space and of proper means for ventilation in barracks and huts has been dealt with at length in Regulations, and during the present period of embodiment these closely related subjects have been, from time to time, the subject of War Office Letters and Command and other Orders. With regard to floor space, that generally allowed is 40 square feet per man, the cubic allowance being 400 feet. The huts in most hutment camps have a superficial floor area of 1200 square feet (being 20 feet broad and 60 feet long) and a total cubic content approximately of 12,000 cubic feet. The proper number of men to be housed in each of these huts is therefore 30. It is inadvisable that this number should be exceeded, except for short periods and in the presence of grave necessity, as an examination of such huts at night when all the bed-boards are in position for occupation demonstrates that the above floor space allowance, though probably sufficient under existing conditions, is certainly not on a too liberal scale. It is essential that the space available should be used to the greatest advantage by ensuring that the beds are distributed evenly along and at right angles to the walls of the hut. The N.C.O. in charge of the hut should be held responsible that this arrangement is maintained throughout the night. The placing of two or more bed-boards in close contiguity and the pooling of blankets by two or more men should be prohibited as being for every reason profoundly unsatisfactory.

Ventilation.

As the cubic space allowance per head in these huts is only 400 cubic feet it is of great importance that special attention should be paid to their ventilation. If the respiratory impurity is not to be allowed to rise above 0·2 part of CO_2 per 1000 (a generally accepted standard) each individual in the hut will require 3000 cubic feet of air per hour. Since the cubic allowance per head is only 400 feet it is obvious that the air in the hut will require to be changed from seven to eight times per hour if the delivery of fresh air is to be on the above scale. It is generally held that in inhabited houses in this country the ventilation openings should be of such a size as to provide for each individual an inlet space of 24 square inches and an outlet space of the same size. It is doubtful if this provision is sufficient in the case we are dealing with—i.e., in the case of huts having a cubic capacity of only 400 cubic feet per unit, and experience has shown that under such circumstances the inlet and outlet space per individual should not be less than 40 square inches. If means are taken to secure adequate distribution of the entering air and to secure the delivery of the air at a proper level, no hardship from draughts is experienced in connexion with this liberal provision of ventilation space.

With regard to the type of ventilation openings to be adopted, the more elaborate varieties should be avoided and preference should be given to simple and efficient expedients; for elaboration in this matter, in addition to being expensive, generally means the provision of space for the accommodation of dirt. It is also advisable that the openings should, as far as is possible, be so placed and of such a nature that it will be impossible, or at all events difficult, for the individuals inhabiting the huts to place the apertures out of action. With the object of legislating against such endeavours to close ventilating openings a special order should be issued against the practice, and patrols should be placed on duty to enforce compliance. This applies especially when windows are relied upon as ventilating openings. In practice it is found that the best ventilating apertures are open windows, louvred openings in the gable ends of the huts or at the roof-ridge, and spaces surrounding the stove-pipes. The last-named expedient is applicable only when the pipes pass through the roof. The great advantage of the use of windows as ventilators is that the ventilating apertures can be varied in size, in number, and in situation according to the state of the weather, &c., and when windows are constructed on the hopper principle (as is the case in most army huts) they make ideal ventilators. Their disadvantage is that they are too readily under the control of the men, but this can be met by the provision of permanent hopper checks and by proper supervision. The average hopper window in an army hut, when open to the full extent permitted by the hopper, provides an air space of 400 square inches. If the hut contains 30 men, and each man is to have an air-entry space of 40 square inches and an air-exit space of similar extent, the total area for all openings will be 2400 square inches. This can be provided by opening six windows, each of which provides 400 square inches of space. When properly disposed three of these windows will act as air entries and three as air exits.

Though it has been stated by an eminent authority that in order to ensure proper distribution of the entering fresh air each individual inlet opening should be not larger than 60 square inches, experience has shown that quite excellent results are obtained when such openings are 400 square inches in extent, as specified above. It is necessary, however, to exercise care in selecting the windows which are to be opened, and the best results are obtained when those chosen are the three end ones on each side of the hut, one series of three being diagonally opposite the other series. In ventilating huts by windows we rely very specially upon the perflating and aspirating action of the wind, and this is another reason why care must be exercised in selecting the windows which are to be used as ventilators. It has been shown that when proper care is taken and due supervision is exercised huts of the type already described can be efficiently ventilated by the use of windows alone, and in the complete absence of special ventilating openings, such as louvred ridges and ventilating spaces round stove-pipes. Indeed, some authorities consider that cross ventilation by windows alone is the ideal type of ventilation, and that the provision of accessory openings disturbs the general scheme of air movement in the room or hut, causes eddies, and leads to inefficient distribution. The amount of ventilation opening specified above is that required as a minimum at all seasons of the year; in summer all the windows of the huts should be kept open to their full extent.

Louvred openings in the gable ends of the huts possess the advantage that they are, comparatively speaking, difficult to put out of action. They should be placed one in each gable end, and their size should vary from 200 to 400 square inches, according to the other means of ventilation provided. Ventilating spaces around stove-pipes which pass through the roof act as air-extraction shafts (at least when fires are burning) and in the presence of such spaces all other openings situate below the level of the ridge of the roof act as air entries. Such stoves are generally placed in the middle of the hut, and as the current of air within the hut will be towards the situation of the stove the proper points for the opening of windows which are to act as air entries are at the four corners of the hut.

Incineration of Night-soil.

In camps in which bucket latrines are installed the most satisfactory method of dealing with the bucket contents is incineration. If incineration is impracticable the night-soil should be disposed of in shallow trenches, similar to those used for the burial of sludge at many sewage works (e.g., those at Hatfield). In this case the site chosen for the trenches should be not less than half a mile from and to leeward of the camp, and it should be of suitable size and levels to permit of efficient trenching. Mere dumping of night-soil is objectionable from every point of view.

To work efficiently, incinerators must be of such a type and must be so operated as to make for rapid and thorough destruction of the night-soil with the formation of only simple gaseous products of combustion. Incineration must not be accompanied by the emission of charred particles and ammoniacal and other odorous gases, for in this event

grave nuisance arises. Closed destructors, in which it is possible to produce a fierce fire before the introduction of the night-soil, which are provided with suitable highly heated baffles to intercept the products of combustion as these leave the fire-grate, and which possess relatively tall chimneys (not less than 10 feet), produce the best results.

Technique for Incinerators.

In addition to the dry camp refuse which is available it is generally advisable to have about 1 cwt. of ordinary fuel (coal or wood) per unit destructor for 1000 men. A fire is started with ordinary fuel and dry camp refuse, and only when this is going strongly and the inside of the incinerator is well heated may the introduction of fæcal matter be commenced. Urine and liquor cresolis saponatus contained in the buckets should be drained off into gullies, or, if these are not available, into specially constructed soakage pits. The fæcal matter remaining in the buckets may then be tipped into the destructor; but better results are obtained if the fæces are previously well mixed with dry camp refuse or with sawdust to such an extent as to make the resulting mixture of the consistence of a thick paste. Each bucket of fæcal matter must be fed to the destructor regularly and systematically when the matter already introduced has been destroyed, the fire meanwhile being kept at its maximum intensity by the introduction of ordinary fuel and dry refuse from time to time as may be required. The whole secret of efficiency is contained in intelligent stoking and avoidance of choking the fire by the too rapid introduction of undiluted fæcal matter.

Disposal of Urine and Waste Water in Hutted Camps.

In many hutted camps in which bucket latrines have been installed land treatment—frequently in the form of downward filtration—of the liquid sewage (which in such cases consists of urine and ablution water, and which contains no fæcal matter) has been adopted. As a preliminary, generally the solids of the sewage are partially removed by grease traps and by mechanical settlement in tanks. This system of treatment as applied has not given uniformly satisfactory results, and some of the more obvious causes for the comparative lack of success which has been experienced may now be briefly discussed.

In the first place it has been assumed by some that a sewage which contains no fæcal matter and which consists only of urine and ablution water is weaker than an ordinary domestic sewage, and will therefore be more easy to treat. This idea is contrary to practical experience, for the water used to flush water-closets produces a dilution of the sewage which is out of proportion to the solid matter added in the form of fæces. Therefore, in the absence of water-carriage, the sewage is more concentrated, and, moreover, the solids (grease, soap, vegetable remnants) present in such a sewage are difficult to deal with, for they do not lend themselves readily to removal by sedimentation or liquefaction. The above assumption has led to the insufficient provision of means for the removal of suspended solids and to cramping in the matter of the provision of land area.

The means for the removal of suspended solids generally take the form of grease traps in connexion with cook-houses and ablution places and of sedimentation tanks placed in proximity to the land filtration or irrigation areas. As a rule these traps and tanks are not large enough and are not cleaned out sufficiently often. The traps should be cleaned once a day and the tanks (in an average case) once a week. Tanks should be of such a size as to hold from half to three-quarters of the daily flow and should be in duplicate in order to facilitate sludging. The area of land required for treating the sewage will vary with the character of the soil and subsoil, according to whether irrigation or filtration is the method adopted, and according to the degree of perfection of the removal of suspended solids, but it should not be less than will result in a ratio of 150 to 500 of population per acre. Other causes of unsatisfactory results in the land treatment of camp sewage are lack of allowance for the fact that the bulk of the sewage comes away in two to three large gushes, which occur at the same time each day; unsuitability as regards levels and character of the land; the non-provision of under-drains in cases in which these are necessary; the improper setting of carriers and distributers; and lack of adequate care and treatment of the ground, with the result that it becomes "sick" or "sour," and the sewage ponds on the surface and does not pass away.

In cases in which land irrigation is the system adopted under-drainage may or may not be necessary, according to circumstances, but in the case of filtration the provision of under-drains is nearly always necessary. Such drains should be laid at an average depth of 4 to 6 feet from the surface, and should be orientated transversely to the general slope of the ground. In like manner the sewage distributers should be laid at right angles to, and not parallel with, the ground slope. Sickening of the soil and ponding of sewage can be prevented by the removal of an adequate amount of the suspended solids through the medium of tank treatment, by properly regulating the periods of rest and the dose of sewage allocated to each plot of land, by the breaking up of layers of "pan," and by proper care of the ground surface. As has been shown by Purvis, McHattie, and Fisher, cropping is unnecessary and scarification and turning of the surface soil followed by short periods of rest prevent the formation of "sick" areas.

Prevention of Scabies and Verminous Infestation.

Scabies and pediculosis are diseases which for a variety of reasons are specially liable to spread among soldiers once one or other of the specific parasites has been introduced from without. Their prevention obviously concerns camp sanitation closely. Introduction of either disease may be avoided, or recognised early enough to prevent wide dissemination, by special medical inspections of men newly joined and of men who have returned from leave, and by regular frequent routine inspections of whole units. The rapidity of spread is most marked in quarters which are overcrowded and in which cleanliness both of premises and personnel is not insisted on, and it therefore follows that the provision of adequate space and the paying of due attention to details of regular ablution are of the highest importance in this connexion. But there are certain circumstances or conditions of affairs which militate against the success of preventive schemes conceived on the lines indicated above. These conditions are the lack of attention to cleanliness, &c., which is often in evidence in guard detention-rooms, the mixing of blankets belonging to different individuals, the re-issue of blankets which have not been washed or disinfected, and the discharge of men who have been suffering from either of these diseases to their units before the disease has been thoroughly cured or with their kits imperfectly disinfected.

There is some reason to believe that under the unsatisfactory hygienic conditions which exist in many of them these guard detention-rooms may constitute what may be termed endemic foci of scabies and verminous infestation. This can be all the more readily understood when one remembers that it is, generally speaking, from among the lower types that the inhabitants of guard detention-rooms are drawn. Much greater attention should be paid to the inspection and cleansing of such rooms and of the individuals confined therein. In one camp the systematic disinfection of the entire kits of all men discharged from detention was followed by a sensible diminution in the incidence of scabies and verminous infestation.

It is highly probable that the mixing of blankets belonging to different men, and the re-issue without washing or disinfection of blankets which have been taken into store, materially aid the spread of body parasites. Blankets should not be allowed to become mixed, and precautions should be taken to ensure that each man always has the same blankets. Numbering blankets and men and penalising men found in possession of blankets bearing numbers not their own would prevent interchange. All used blankets taken into store should be washed or disinfected before re-issue. It is of the highest importance that all medical officers should satisfy themselves before the patient's discharge that his infectivity has disappeared and that his entire kit has been properly disinfected.

ROYAL MEDICAL BENEVOLENT FUND.

AT the last meeting of the committee, held on May 9th, 20 cases were considered and £195 voted to 16 of the applicants. The following is a summary of the cases relieved:—

L.S.A. Lond. who had practised at Hereford. Has now joined the R.A.M.C., and his inclusive pay is 18*s.* 6*d.* per day. He pays 17*s.* 6*d.* per week for a cottage. He gave up a practice worth £800 a year. Is married and has one son, aged 16, at school at Dover, where the fees are £120. Applicant requires help to finish the education of his son.

The boy has gained two scholarships worth £30, and if the Fund could provide £30 he could manage. His income is not sufficient to meet his expenses, which he puts down at—son £120, wife £100, self £100. Case sent by the Professional Classes War Relief Council. Voted £10 and referred to the Guild.—Widow, aged 60, of L.R.C.S. Irel. who practised at Little Sutton and died in 1900. Applicant received about £25 per annum from property, which was mortgaged, but owing to this being recalled and the rate of interest on the new one increased and heavy repairs it has taken the proceeds (£25). She has also taken in boarders, but has not been successful. This with the high price of food and failing health she finds herself in financial difficulties. Rent paid £42 11s. per annum. Voted £10.—Widow, aged 56, of M.R.C.S. Eng. who practised at Bradworthy and died in 1908. Applicant has lost all her late husband left through bad investments. Has now lost her mental faculties. Has two daughters, aged 30 and 21, both governesses, who earn together £90, and one son, aged 26, single, an engineer with £160 per annum, and who provides a home for his mother, and the daughters give her £32 10s. Friends give £39. Referred to the Guild.—Widow, aged 70, of M.R.C.S. Eng. who practised at Liverpool and died in 1889. After the death of her husband she earned a living by taking in lodgers. One of her sons qualified as a medical man, and she kept house for him, but owing mainly to overwork through the war he died early this year, and all he left was an insurance of £250 which went to his mother. The applicant proposes to try and take lodgers again, but for the present has her son's house rent, £71 10s., on her hands. Voted £10.—Widow, aged 57, of L.R.C.P. Edin. who practised at Blackburn and died in 1902. Used to earn a living by looking after children while their parents worked in the cotton mills, but owing to ill-health has had to give this up. Has one daughter, aged 19, a shop assistant, who earns 15s. per week. This is their sole income apart from the Fund. The Manchester Branch of the Guild speaks well of this case and helps a little. Previous relief, twice, £24. Voted £15 in 12 instalments.—Daughter, aged 69, of M.R.C.S. Eng. who practised at Cranbrook and died in 1890. Applicant is not very bright mentally and quite unable to work. She has an annuity from another charity, £30. She has to pay £1 per week for board and lodging, and as the landlady with whom she lived has just died she may have to pay more. She is a difficult person to get on with. Previous grants have been paid to Dr. Alex. Walker, of Peterborough. Previous relief, five times, £60. Voted £12 in 12 instalments.—Daughter, aged 54, of M.R.C.S. Eng., L.R.C.P. Dub. who practised at Rickmansworth and died in 1901. Applicant was left quite unprovided for and suffers from arthritis and fibrosis, &c. Only income £30 from a relative. Pays £13 for rent of one room. Relieved three times, £30. Voted £10 in two instalments and referred to the Guild.—Widow, aged 62, of M.D., C.M. McGill who practised at Waterloo, Liverpool, and died in 1914. Owing to the very long illness of her late husband he was unable to provide for his family. There are five children, ages 30–38. The two sons are abroad and unable to help, and of the daughters, one is suffering from tuberculous kidney, another is dyspeptic, and the eldest is the only wage-earner. She has £91 per year, £29 paid in rent. Relieved once, £18. Voted £18 in 12 instalments and referred to the Guild.—Daughter, aged 69, of L.S.A. Lond. who practised at Christchurch and died in 1880. Has a life interest in an old house at Christchurch, but owing to increasing expenses does not benefit from it. Lived with a sister, recently dead, who had an artists' pension of £80, which went into the general fund. Applicant earns a little as an artist, but finds it very difficult to obtain commissions at present, and her eyesight is failing. Relieved once, £18. Voted £18 in 12 instalments.—Daughter, aged 44, of M.D. Aberd. who practised at Glasgow and in Australia and died in 1891. Applicant was without any means; she trained as a masseuse, and was able to earn her own living until her health became impaired two years ago, and was then only able to take occasional work. Has recently had diphtheria and is now recovering, and hopes to work again soon. Relieved twice, £20. Voted £10.—Daughter, aged 60, of M.R.C.S. Eng. who practised at Blackheath and died in 1880. Applicant mentally deficient, and has to be provided for by a sister who has an interest in a girls' school, and has a difficulty in making ends meet. The help previously given has been greatly appreciated. Strongly recommended by the Guild. Relieved eight times, £69. Voted £10 in two instalments.—Widow, aged 40, of L.R.C.P. & S. Edin. who practised at Cliffoney, co. Sligo, and died in 1912. After her husband's death applicant opened a sweet shop in a town in Scotland, and managed to get on until she had to undergo an operation in May, 1915. The Fund then made her a grant of £10. In April, 1916, her shop was blown up by a bomb from a Zeppelin, and all her stock and furniture destroyed, and she was not insured. Now wants help to re-establish herself. Postponed for further inquiries.—Daughter, aged 61, of L.S.A. Lond. who practised at Cheadle and died in 1874. Was left totally unprovided for, and owing to ill-health has never been able to undertake permanent work. Earns a few pounds a year by sewing, and a friend provides £25 per annum. Rent 4s. 9d. per week. Relieved ten times, £88. Voted £12 in 12 instalments.—Daughter, aged 65, of M.D. St. And. who practised at Dover and died in 1881. Has endeavoured to earn a living by conducting a Servants' Agency, but during the last two years, and especially since the war, has been very unsuccessful. She has also been in the habit of taking in some boarders, but these have ceased. Relieved twice, £20. Voted £10.—Widow, aged 49, of L.S.A. Lond. who practised at Leyton and died in 1914. Was left without any means with five young daughters. On the death of her husband it was discovered that the practice was much involved and had to be sold to pay the creditors. Her brother, a medical man, bought the practice with a view of helping his sister and her children, but owing to the high salary that had to be paid to a locum and the increased cost of drugs the practice was not paying. Help wanted towards the education of the children. Previous relief, three times, £25. Voted £10.—M.R.C.S. Eng., married, who had practised at Manchester and London. Owing to ill-health unable to earn anything and has lost all his savings. Only income an Old Age Pension. Relieved twice, £19 10s. Voted £18 in 12 instalments and referred to the Guild.—Wife, aged 50, deserted by her husband who is an M.R.C.S. Eng. Has no means and is a chronic invalid. Has one daughter, aged 22, who nurses her mother and has a few day-school pupils, from whom she receives 6s. 6d. per week, of which 5s. has to be paid in rent. Relieved three times, £36. Voted £12 in 12 instalments.

Subscriptions may be sent to the honorary treasurer, Dr. Samuel West, 11, Chandos-street, Cavendish-square, London, W.

WESTERN CANADA.

(FROM OUR OWN CORRESPONDENT.)

Registration of Nurses.

A BILL has recently been introduced into the Legislature of British Columbia to divide the nurses of the province into two classes—registered graduate nurses (R.G.N.) and registered household nurses. It does not forbid other women to practise as nurses for hire, but provides considerable penalties for fraudulent assumption of the titles above. The registered graduate nurse is to be a graduate of an approved training school and must have passed an examination in elementary bacteriology, materia medica, anatomy and physiology, dietetics, medical nursing (including contagious diseases), surgical nursing (including gynæcology), obstetrical nursing, and children's diseases. The household nurse passes an *oral* examination in practical nursing (which will show her *manual* dexterity, the Bill says), also a written examination on subjects relating to practical nursing care. A recent amendment to the Bill provides that wherever a word signifies the female sex the male shall also be included, so that male nurses are also to be regulated. The intention is to enable the public to decide what nurses are well educated and of good character. The Bill in its present form is crude and hasty and hardly likely to become law.

The Weiss Urinary Reaction in Tuberculosis.

At the April meeting of the Victoria (B.C.) Medical Society, Fleet-Surgeon Home, pathologist to the Provincial Hospital at Victoria, read a note on the Weiss reaction in the urine of tuberculous patients. The reaction is carried out by diluting 10 c.c. of filtered urine with 20 c.c. of water. 15 c.c. of the dilution are placed in each of two test tubes, to one of which are added three drops of a 1:1000 solution of permanganate of potash. A tuberculous urine is supposed to give a characteristic orange-amber colour. In 80 urines of known tuberculous patients there was no change in 30, a trace in 21, definite in 11, and a marked change in 18. In 42 urines from the general wards 14 showed definite change, but one proved to be from a case of tuberculous hip disease, and none of these reactions was marked. 22½ per cent. of the urines of tuberculous cases gave a marked Weiss reaction, but none of the urines of non-tuberculous cases. Those cases which gave marked Weiss reactions had, all of them, many tubercle bacilli in the sputum when it was examined the week before, and every fatal case examined showed a marked reaction. A diazo reaction had only been found once in 100 urines from tuberculous patients. So far the observations indicate that a marked Weiss reaction is characteristic of tuberculosis and suggests a bad prognosis.

May 7th.

PARIS.

(FROM OUR OWN CORRESPONDENT.)

The Treatment of Cerebro-spinal Meningitis.

THE existence of cerebro-spinal meningitis due to other germs than the meningococcus, and the fear of serum accidents seem to have caused hesitation in regard to the serotherapy of epidemic cerebro-spinal meningitis. Accordingly M. Nobécourt, M. Jurie des Camiers, and M. Tournier have, at the Medical Society of the Hospitals, endeavoured to introduce some precision in the conduct of antimeningococcic serotherapy, utilising observations made by them at the infectious diseases hospitals to which they are attached. They conclude that when a patient presents the symptoms of meningitis lumbar puncture should be done at once, the quantity of fluid withdrawn not being limited when it flows spontaneously, provided pains in the head do not appear. Lumbar puncture does not allow of delay when the symptoms indicate cerebro-spinal meningitis—sudden onset, vomiting, cephalalgia, Kernig's sign, and stiffness of neck. If the cerebro-spinal fluid is turbid, 30 c.c. of antimeningococcic serum should be injected and the treatment continued even if bacteriological examination does not reveal the meningococcus—that is, provided no other germs are found. On the next day is made a second puncture, and a second injection of 30 c.c. or 20 c.c. If the fluid is less turbid and if the

symptoms amend two days elapse before the third puncture. If not, it is done in 24 hours. Again 20 c.c. are injected, unless the fluid is clear. The fourth puncture is done after two, three, or four days if the turbidity lessens and improvement continues. When the fluid is clear no more serum is injected, but 10 c.c. if the turbidity is much less. If the third puncture has not revealed a favourable state of the fluid, punctures are made every two days, on each occasion 20 c.c. of serum being injected. This is continued until the fluid is clearer. Then the punctures and the injections are made every three or four days, stopping on the fluid being clear. In following this technique anaphylaxis is not to be feared. Frequently the injections provoke in the following 12 or 36 hours an exacerbation of the symptoms—cephalalgia, rhachialgia, and stiffness of neck. This constitutes neither an indication to resort to puncture nor a contraindication to continue the treatment. In short, the variations in the cerebro-spinal fluid are a more precise guide than the clinical symptoms in antimeningococcic serotherapy. This method gives good results in children as well as in adults, the doses of the serum being much the same at all ages, except in babies. These doses have been as well tolerated by soldiers of 18 to 20 as by those of 30 to 40 years.

Wine from a Psychological Point of View.

Before the Academy of Medicine M. Ch. Fiessinger has spoken recently of the use of wine. Activating the internal secretions, wine, he said, stimulates the association of ideas and excites the affective states. Mental originality is more constantly renewed, he declared, and impulses of the heart and of active goodness are more often in evidence, among moderate drinkers of wine (30 to 60 centilitres a day). Of the conditions which have fashioned the genius of the French mind the habitual use of wine has been, he thought, most important in a happy formation. M. Linossier remarked that it might be dangerous to make before the academy a eulogy of wine, which might be an excuse for those who did not take small quantities. M. Maurice de Fleury said that for neurasthenic patients he had renounced giving wine owing to the results he was obtaining, and that he had become a partisan of the use of water alone. M. Fiessinger said, in reply to M. Linossier, that practising at Vichy, he saw especially large drinkers of wine; and in answer to M. de Fleury that neurasthenics are generally patients bearing wine very badly. If they take bismuth, the use of wine causes them no inconvenience.

May 20th.

THE SERVICES.

ROYAL NAVY MEDICAL SERVICE.

Deputy Surgeon-General D. J. P. McNabb has been appointed Deputy Director-General, and Fleet-Surgeon J. F. Hall Assistant Director-General.

The following appointments have been made:—Staff-Surgeon H. M. Braithwaite to *Foresight*, and Temporary Surgeon C. R. T. Thomson to *Pembroke*.

ROYAL ARMY MEDICAL CORPS.

A. J. Cleveland to be temporary Major whilst employed at the Norfolk War Hospital.

Temporary Lieutenant J. H. Porter to be temporary Captain.

J. W. Nunn to be temporary Honorary Captain whilst serving with No. 1 British Red Cross Hospital.

Temporary Lieutenant S. G. Trail relinquishes his commission.

Canadian Army Medical Corps: Majors to be temporary Lieutenant-Colonels: E. G. Davis and E. J. Williams. To be temporary Lieutenant-Colonels: Lieutenant-Colonel W. A. Scott, A. W. Tanner, C. A. Peters, and S. W. Hewetson. To be temporary Majors: T. McLeask, A. T. Bazin, and F. H. Mayhood. To be Temporary Captains: Lieutenant C. A. Langmaid, Lieutenant L. L. Stauffer, C. H. C. Bell, C. D. Hewett, H. W. Wadge, C. W. Johnston, A. A. Drinnan, J. T. Mulvey, H. H. Eyres, J. C. Tull, F. J. Tees, D. Waterston, A. Ross, G. O. Wood, C. G. Gunn, J. A. Reid, R. T. Washburn, H. G. Chisholm, A. W. Park, R. Sanson, J. J. Jamieson, A. Lawther, C. K. Dowson, D. B. Lazier, and L. B. Graham.

INDIAN MEDICAL SERVICE.

It was recently announced in the press that after the open competitive examination held last July for admission to the Indian Medical Service no similar examination would be held during the continuance of the war, but that such appointments as might be required to meet the absolutely indispensable needs of the service would be made by nomination by the Secretary of State. To assist him in making these appointments, which, as already announced, will be limited in number to the absolutely indispensable needs of the service, Mr. Chamberlain has appointed a Selection Committee who will summon and interview such applicants as may appear to be *prima facie* suitable, and make recommendations for appointment. Applications for appointment should be addressed to the Secretary of the Military Department, India Office, Whitehall, S.W., and should contain concise particulars of the applicant's medical degrees and career. Applicants must be over 21 and under 32 years of age at the time of application. Particulars regarding pay, promotion, &c., in the Service can be obtained from the Secretary, Military Department.

The King has approved the promotion of the following officers:—Captains to be Majors: C. C. C. Shaw, J. W. H. Babington, and A. S. M. Peebles.

SPECIAL RESERVE OF OFFICERS.

Royal Army Medical Corps.

J. A. Crawford and G. Morris, lieutenants on probation, are confirmed in their rank.

TERRITORIAL FORCE.

Army Medical Services.

Lieutenant-Colonel (temporary Colonel) T. F. Dewar, from A.D.M.S., Central Force, to be A.D.M.S., Home Defence.

Captain A. H. Hogarth, from Attached to Units other than Medical Units, to be D.A.D.M.S., Welsh Division, and Captain H. F. Wilkin, from Attached to Units other than Medical Units, to be D.A.D.M.S., Northumbrian Division.

Royal Army Medical Corps.

South Midland Mounted Brigade Field Ambulance: Lieutenant E. P. Dawes to be Captain.

London Field Ambulance: Major A. W. French, from South Western Mounted Brigade Field Ambulance, to be Major. S. Henry to be Lieutenant.

Northern General Hospital: Captain (temporary Major) L. R. Braithwaite is seconded for duty with a General Hospital. Captain H. J. Macvean is seconded for duty with a General Hospital.

Welsh Field Ambulance: Major T. Donovan to be temporary Lieutenant-Colonel whilst commanding a Field Ambulance. Lieutenant J. E. Dunbar to be Captain.

London Sanitary Company: Lieutenant R. H. Murray to be Captain. N. Gebbie to be Lieutenant.

East Lancs. Field Ambulance: Lieutenant (temporary Captain) F. Jeeves to be Captain. Lieutenant (temporary Captain) W. P. Ferguson to be Captain.

West Lancs. Division Sanitary Section: Lieutenant W. H. Hill to be Captain.

South Midland Casualty Clearing Station: Captain C. F. Walters, from Southern General Hospital, to be Captain.

Lowland Mounted Brigade Field Ambulance: Captain (temporary Major) R. Y. Anderson to be Major.

Attached to Units other than Medical Units.—Captain A. C. O. Brown, from South Midland Mounted Brigade Field Ambulance, and Lieutenant W. E. Lee to be Captains. To be Lieutenants: J. Fraser, J. Wilson, and J. F. Russell (late Lieutenant, Royal Welsh Fusiliers).

VITAL STATISTICS.

HEALTH OF ENGLISH TOWNS.

IN the 96 English and Welsh towns with populations exceeding 50,000 persons at the last Census, 8440 births and 4777 deaths were registered during the week ended Saturday, May 13th. The annual rate of mortality in these towns, which had been 16·4, 17·0, and 15·2 per 1000 in the three preceding weeks, further fell in the week under notice to 14·4 per 1000 of their aggregate civil population estimated at 17,312,295 persons for the year 1915. During the first six weeks of the current quarter the mean annual death-rate in these towns averaged 16·4, against 16·2 per 1000 in London. Among the several towns the death-rate during the week ranged from 5·5 in Eastbourne, 7·1 in Ilford, 7·4 in Wimbledon, 8·4 in West Bromwich, and 8·5 in Enfield and in Oxford, to 21·3 in Stoke-on-Trent, 21·7 in Oldham, 23·3 in Gateshead, 23·6 in Dudley, and 25·3 in Sunderland.

The 4777 deaths from all causes were 263 fewer than in the previous week, and included 352, which were referred to the principal epidemic diseases, against 431 and 383 in the two preceding weeks. Of these 352 deaths, 125 resulted from whooping-cough, 124 from measles, 48 from infantile diarrhœal diseases, 39 from diphtheria, 18 from scarlet fever, 7 from enteric fever, and 1 from small-pox. The mean annual death-rate from these diseases was equal to 1·1

per 1000, and coincided with that recorded in the previous week. The deaths attributed to whooping-cough, which had been 146, 175, and 139 in the three preceding weeks, further fell to 125, and caused the highest annual death-rates of 1·4 in West Ham, in Southend-on-Sea, and in Warrington, 1·5 in Burnley, 1·8 in Sunderland, and 1·9 in Lincoln. The deaths referred to measles, which had been 121, 119, and 120 in the three preceding weeks, slightly rose to 124; the highest recorded rates from this cause were 1·6 in West Ham, 1·8 in Tottenham, 2·2 in Grimsby, 2·5 in Stoke-on-Trent, and 4·1 in Dudley. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had been 66, 60, and 59 in the three preceding weeks, further declined to 48, and included 18 in London and 7 in Birmingham. The deaths attributed to diphtheria, which had declined from 65 to 43 in the four preceding weeks, further fell to 39, of which 9 occurred in London and 4 each in West Ham and Liverpool. The deaths referred to scarlet fever, which had been 22, 24, and 27 in the three preceding weeks, numbered 18, and included 4 in London and 2 each in Birmingham, Coventry, and Liverpool. The 7 fatal cases of enteric fever were equal to the average in the earlier weeks of the quarter, but showed no excess in any individual town. The death from small-pox was registered in Cardiff.

The number of scarlet fever patients under treatment in the Metropolitan Asylums Hospitals and the London Fever Hospital, which had declined from 1778 to 1594 at the end of the five preceding weeks, further fell to 1549 on May 13th; 167 new cases were admitted during the week, against 191, 179, and 153 in the three preceding weeks. These hospitals also contained on May 13th 1240 cases of diphtheria, 233 of measles, 227 of whooping-cough, 30 of enteric fever, and 1 of small-pox. The 1113 deaths from all causes in London showed a decline of 128 compared with the previous week, and corresponded to an annual death-rate of 13·5 per 1000. The deaths referred to diseases of the respiratory system, which had steadily declined from 405 to 247 in the eight preceding weeks, further fell to 182 in the week under notice.

Of the 4777 deaths from all causes in the 96 towns, 144 resulted from violence, 324 were the subject of coroners' inquests, and 1450 occurred in public institutions. The causes of 44, or 0·9 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in its 14 suburban districts, in Sheffield, Leeds, Bristol, Hull, and in 58 other smaller towns. Of the 44 uncertified causes, 9 were registered in Birmingham, 7 in Liverpool, 4 each in Stoke-on-Trent and Preston, and 2 each in Southend-on-Sea, Leicester, Manchester, Gateshead, and Tynemouth.

In the 96 large English and Welsh towns with populations exceeding 50,000 persons at the last Census 8810 births and 4673 deaths were registered during the week ended Saturday, May 20th. The annual rate of mortality in these towns, which had been 17·0, 15·2, and 14·4 per 1000 in the three preceding weeks, further fell in the week under notice to 14·1 per 1000 of their aggregate civil population, estimated at 17,312,295 persons for the year 1915. During the first seven weeks of the current quarter the mean annual death-rate in these towns averaged 16·0, against 15·8 per 1000 in London. During the week the death-rate ranged from 4·0 in Swindon, 6·0 in Hastings, 6·5 in Ilford, 6·6 in Eastbourne, and 6·8 in Enfield, to 20·4 in Salford, 20·7 in Sunderland, 20·9 in St. Helens, 22·3 in Wigan, and 22·9 in Gateshead.

The 4673 deaths from all causes were 104 below the number in the previous week, and included 352 which were referred to the principal epidemic diseases, against numbers declining from 431 to 362 in the three preceding weeks. Of these 352 deaths, 128 resulted from whooping-cough, 103 from measles, 62 from infantile diarrhœal diseases, 38 from diphtheria, 15 from scarlet fever, and 6 from enteric fever, but not one from small-pox. The annual death-rate from these diseases was equal to 1·1 per 1000, and coincided with that recorded in each of the two preceding weeks. The deaths attributed to whooping-cough, which had been 175, 139, and 125 in the three preceding weeks, slightly rose to 128, and caused the highest annual death-rates of 1·4 in Sunderland, 1·6 in Manchester, 1·8 in Acton, and 3·9 in Newport (Mon.). The deaths referred to measles, which had been 119, 120, and 124 in the three preceding weeks, fell to 103; the highest recorded death-rates from this cause were 1·2 in West Ham, 1·4 in Stoke-on-Trent and in Salford, and 2·1 in Dudley. The fatal cases of diarrhœa and enteritis (among infants under 2 years), which had declined from 66 to 48 in the four preceding weeks, rose to 62, and included 21 in London, 7 in Birmingham, 5 in Manchester, and 4 in Sheffield. The deaths attributed to diphtheria, which had declined from 65 to 39 in the five preceding weeks, numbered 38, of which 6 occurred in London and 4 in Liverpool. The deaths referred to scarlet fever, which had been 24, 17, and 18 in the three preceding weeks, fell to 15, and included 3 in Liverpool. The 6 fatal cases of enteric fever, of which 2 were registered in Preston, were slightly below the average in the earlier weeks of the quarter.

The number of scarlet fever patients under treatment in the Metropolitan Asylum Hospitals and the London Fever Hospital, which had steadily declined from 1778 to 1549 at the end of the six preceding weeks, further fell to 1444 on Saturday last; 139 new cases were admitted during the week, against 179, 153, and 167 in the three preceding weeks. These hospitals also contained on Saturday last 1225 cases of diphtheria, 214 of whooping-cough, 196 of measles, 32 of enteric fever, and 2 of small-pox. The 1098 deaths from all causes in London were 16 fewer than in the previous week, and corresponded to an annual death-rate of 13·3 per 1000. The deaths referred to diseases of the respiratory system, which had declined from 405 to 182 in the nine preceding weeks, further fell to 160 in the week under notice.

Of the 4673 deaths from all causes in the 96 towns, 152 resulted from violence, 333 were the subject of coroners' inquests, and 1419 occurred in public institutions. The causes of 36, or 0·8 per cent., of the total deaths were not certified either by a registered medical practitioner or by a coroner after inquest. All the causes of death were duly certified in London and in its 14 suburban districts, in Sheffield, Leeds, Bristol, Bradford, Newcastle-on-Tyne, and in 63 other smaller towns. Of the 36 uncertified causes, 13 were registered in Birmingham, 7 in Gateshead, 4 in Liverpool, and 2 each in Manchester and Preston.

HEALTH OF SCOTCH TOWNS.

In the 16 largest Scotch towns with an aggregate population estimated at 2,372,000 persons at the middle of this year, 1188 births and 681 deaths were registered during the week ended Saturday, May 20th. The annual rate of mortality in these towns, which had steadily declined from 20·5 to 14·8 per 1000 in the six preceding weeks, rose to 15·0 per 1000 in the week under notice. During the first seven weeks of the current quarter the mean annual death-rate averaged 16·9, against 16·0 per 1000 in the large English towns. Among the several towns the death-rate during the week ranged from 6·1 in Falkirk, 6·9 in Clydebank, and 8·7 in Motherwell, to 17·8 in Kirkcaldy, 18·7 in Ayr, and 24·4 in Perth.

The 681 deaths from all causes were 8 in excess of the number in the previous week, and included 53 which were referred to the principal epidemic diseases, against 57 and 56 in the two preceding weeks. Of these 53 deaths, 25 resulted from measles, 17 from whooping-cough, 4 each from scarlet fever and infantile diarrhœal diseases, and 3 from diphtheria, but not one from enteric fever or from small-pox. The annual death-rate from these diseases was equal to 1·2, against 1·1 per 1000 in the large English towns. The deaths attributed to measles, which had been 28, 27, and 32 in the three preceding weeks, fell to 25, and included 21 in Glasgow and 2 in Paisley. The deaths referred to whooping-cough, which had been 11 in each of the three preceding weeks, rose to 17, of which 8 were recorded in Glasgow and 2 in Kirkcaldy. The fatal cases of scarlet fever, which had been 10, 5, and 9 in the three preceding weeks, fell to 4, and included 2 in Glasgow. The deaths of infants (under 2 years) from diarrhœa and enteritis, which had been 11, 12, and 4 in the three preceding weeks, were again 4 last week, but showed no excess in any town. The 3 fatal cases of diphtheria were 3 below the average in the earlier weeks of the quarter, and were registered in Glasgow, Paisley, and Perth respectively.

The deaths referred to diseases of the respiratory system, which had been 159, 103, and 103 in the three preceding weeks, rose to 106 in the week under notice, but were 11 below the number registered in the corresponding week of last year. The deaths from violence numbered 19, against 29 and 31 in the two preceding weeks.

HEALTH OF IRISH TOWNS.

In the registration area of Dublin 293 births and 235 deaths were registered during the week ended Saturday, May 20th. The deaths corresponded to an annual rate of 30·0 per 1000, or excluding the 47 deaths resulting from the recent disturbances to 24·0, against 13·3 in London and 15·9 per 1000 in Glasgow.

Of the 235 deaths of all ages, 32 related to infants under 1 year and 43 to persons aged 65 years and upwards. The deaths from the principal epidemic diseases numbered 14, of which 5 were referred to measles, 4 to infantile diarrhœal diseases, 3 to enteric fever, and 1 each to whooping-cough and diphtheria.

The causes of 27 deaths were uncertified, while 9 others were the subject of coroners' inquests; 89 deaths occurred in public institutions.

During the same period 217 births and 129 deaths were registered in the city of Belfast. The deaths were equal to an annual death-rate of 16·7, or 0·5 per 1000 below that recorded in the previous week, and included 16 of infants under 1 year and 22 of persons aged 65 years and upwards. The deaths from the principal epidemic diseases numbered

17, of which 9 resulted from whooping-cough, 3 from measles, 2 each from scarlet fever and infantile diarrhœa and 1 from enteric fever.

The causes of 2 deaths were uncertified and 5 others were the subject of coroner's inquests, while 30 occurred in public institutions.

VITAL STATISTICS OF LONDON DURING APRIL, 1916.

In the accompanying table will be found summarised complete statistics relating to sickness and mortality in the City of London and in each of the metropolitan boroughs. With regard to the notified cases of infectious diseases, it appears that the number of persons reported to be suffering from one or other of the 10 diseases specified in the table was equal to an annual rate of 5·3 per 1000 of the civil population, estimated at 4,310,030 persons; in the three preceding months the rates were 6·5, 6·0, and 5·6 per 1000 respectively. The lowest rates last month were recorded in Kensington, Stoke Newington, Holborn, the City of London, Camberwell, and Lewisham; and the highest rates in Hampstead, Finsbury, Shoreditch, Bethnal Green, and Stepney. The prevalence of scarlet fever showed a further decline from that recorded in other recent months; among the several metropolitan boroughs this disease was proportionally most prevalent in Hampstead, St. Pancras, Finsbury, Shoreditch, Bethnal Green, and Stepney. The Metropolitan Asylums Hospitals contained 1608 scarlet fever patients at the end of last month, against 2157, 1956, and 1735 at the end of the three preceding months; the weekly admissions averaged 190, against 249, 210, and 208 in the three preceding months. Diphtheria also was again less prevalent than it had been in other recent months; the greatest proportional prevalence of this disease was recorded in Chelsea, Finsbury, Shoreditch, Bethnal Green, and Stepney. The number of diphtheria patients under treatment in the Metropolitan Asylums Hospitals, which had been 1538 and 1417 at the end of the two preceding months, had further declined to 1331 at the end of last month; the weekly admissions during the month averaged 149, against 198 and 160 in the two preceding months. Enteric fever was slightly more prevalent in April than it had been in March; of the 33 cases notified during the month, 5 belonged to Hackney, 4 to St. Pancras, and 3 each to Stepney and Woolwich. There were 39 enteric fever patients under treatment in the Metropolitan Asylums Hospitals at the end of last month, against 50 and 46 at the end of the two preceding months; the weekly admissions averaged 7 last month, and corresponded with the weekly average for each of the three preceding months. Erysipelas was proportionally most prevalent in St. Marylebone, Hackney, Finsbury, Shoreditch, Bethnal Green, Southwark, and Bermondsey. The 25 cases of puerperal fever notified during the month included 5 in Lambeth, 4 in Kensington, and 2 each in Fulham, Wandsworth, and Woolwich. The 77 cases of cerebro-spinal meningitis included 10 in Lambeth, 8 in Stepney, 7 in Islington, and 4 each in Hampstead, Finsbury, Southwark, and Battersea; the 2 cases notified as poliomyelitis belonged respectively to St. Pancras and Islington.

The mortality statistics in the table relate to the deaths of persons actually belonging to the several boroughs, the deaths occurring in institutions having been distributed among the boroughs in which the deceased persons had previously resided. During the four weeks ending April 29th the deaths of 5689 London residents were registered, equal to an annual rate of 17·2 per 1000, against 18·1 per 1000 in the preceding month. The death-rates last month ranged from 12·3 in Hampstead, 12·7 in the City of London, 13·8 in Wandsworth, 14·3 in Lewisham, 15·5 in Lambeth, and 15·6 in Woolwich, to 19·1 in Kensington, 19·2 in Islington, 20·1 in Chelsea, 20·6 in Holborn, 21·0 in Finsbury, 21·7 in Southwark, and 25·0 in Shoreditch. The 5689 deaths from all causes included 376 which were referred to the principal infectious diseases; of these, 102 resulted from measles, 18 from scarlet fever, 50 from diphtheria, 141 from whooping-cough, 2 from enteric fever, and 63 from diarrhœa and enteritis among children under 2 years of age. The 102 deaths from measles showed a decline of 160 from the corrected average number in the corresponding weeks of the five preceding years; this disease was proportionally most fatal last month in Hammersmith, Islington, Shoreditch, Stepney, Poplar, Deptford, and Greenwich. The 18 cases of scarlet fever were equal to the corrected average number, and included 3 in Camberwell, and 2 each in Shoreditch, Stepney,

ANALYSIS OF SICKNESS AND MORTALITY STATISTICS IN LONDON DURING APRIL, 1916.

(Specially compiled for THE LANCET.)

CITIES AND BOROUGHS.	Estimated civil population, 1915.	NOTIFIED CASES OF INFECTIOUS DISEASE.											DEATHS FROM PRINCIPAL INFECTIOUS DISEASES.								Deaths from all causes.	Death-rate per 1000 living.
		Small-pox.	Scarlet fever.	Diphtheria.*	Typhus fever.	Enteric fever.	Other continued fevers.	Puerperal fever.	Erysipelas.	Cerebro-spinal meningitis.	Poliomyelitis.	Total.	Annual rate per 1000 persons living.	Small-pox.	Measles.	Scarlet fever.	Diphtheria.*	Whooping-cough.	Enteric fever.	Diarrhœa and enteritis (under 2 years)	Total.	Annual rate per 1000 persons living.		
LONDON...	4,310,030	—	765	583	—	33	2	25	260	77	2	1747	5·3	—	102	18	50	141	2	63	376	1·1	5689	17·2
West Districts.																								
Paddington	131,397	—	19	24	—	2	—	1	7	2	—	55	5·4	—	—	1	2	4	—	6	13	1·3	180	17·9
Kensington	155,795	—	25	7	—	1	—	4	7	2	—	46	3·8	—	1	—	—	1	—	—	2	0·2	228	19·1
Hammersmith	118,559	—	20	16	—	—	—	—	5	1	—	42	4·6	—	4	1	3	1	—	—	9	1·0	154	16·9
Fulham	151,161	—	30	23	—	—	—	2	9	2	—	71	6·1	—	3	1	2	5	—	—	11	0·9	183	15·8
Chelsea	58,421	—	10	14	—	1	—	—	1	2	—	28	6·2	—	1	—	1	1	—	2	5	1·1	90	20·1
City of Westminster ...	135,104	—	21	12	—	1	—	—	8	2	—	44	4·2	—	3	—	—	2	—	3	8	0·8	163	15·7
North Districts.																								
St. Marylebone	100,260	—	8	16	—	—	—	—	9	1	—	34	4·4	—	—	—	1	3	—	—	4	0·5	134	17·4
Hampstead	81,760	—	34	8	—	—	—	1	3	4	—	50	8·0	—	—	—	1	—	—	—	1	0·2	77	12·3
St. Pancras	207,322	—	47	20	—	4	—	1	13	1	1	87	5·7	—	2	—	2	8	—	2	14	0·9	256	16·7
Islington	316,242	—	54	36	—	—	—	—	10	7	1	108	4·5	—	26	1	4	14	1	5	51	2·1	466	19·2
Stoke Newington... ...	50,527	—	5	4	—	1	—	1	—	3	—	14	3·6	—	—	—	1	—	—	—	1	0·3	68	17·0
Hackney	217,883	—	38	26	—	5	1	1	20	1	—	92	5·5	—	5	—	2	9	—	3	19	1·1	267	16·0
Central Districts.																								
Holborn	40,405	—	3	2	—	—	—	—	1	1	—	7	2·3	—	—	—	1	—	—	1	2	0·6	64	20·6
Finsbury	76,915	—	28	17	—	—	—	1	7	4	—	57	9·7	—	2	—	1	1	—	2	6	1·0	124	21·0
City of London	19,461	—	3	2	—	—	—	—	—	—	—	5	3·3	—	—	—	—	1	—	—	1	0·7	19	12·7
East Districts.																								
Shoreditch	103,627	—	28	35	—	2	—	1	14	1	—	81	10·2	—	9	2	1	6	—	4	22	2·8	199	25·0
Bethnal Green	120,207	—	32	27	—	2	—	—	10	1	—	72	7·8	—	1	—	1	14	—	3	19	2·1	151	16·4
Stepney	265,731	—	68	61	—	3	—	1	17	8	—	158	7·8	—	9	2	3	6	—	3	23	1·1	356	17·5
Poplar	156,247	—	19	25	—	1	—	—	9	1	—	55	4·6	—	6	1	4	10	—	4	25	2·1	219	18·3
South Districts.																								
Southwark	179,424	—	26	23	—	—	—	—	19	4	—	72	5·2	—	3	2	1	8	—	6	20	1·5	299	21·7
Bermondsey	117,188	—	20	17	—	—	1	—	11	3	—	52	5·8	—	1	—	1	3	—	3	8	0·9	168	18·7
Lambeth	284,188	—	34	22	—	—	—	5	14	10	—	85	3·9	—	4	—	4	10	—	5	23	1·1	338	15·5
Battersea	161,945	—	28	31	—	1	—	1	8	4	—	73	5·9	—	1	—	—	7	—	3	11	0·9	220	17·7
Wandsworth	312,249	—	56	34	—	2	—	2	18	3	—	115	4·8	—	2	2	4	6	—	2	16	0·7	331	13·8
Camberwell	254,385	—	31	26	—	2	—	—	8	1	—	68	3·5	—	1	3	1	10	—	3	18	0·9	328	16·8
Deptford	110,299	—	23	14	—	—	—	1	9	3	—	50	5·9	—	5	—	1	1	—	—	7	0·8	142	16·8
Greenwich	96,385	—	21	15	—	2	—	—	6	2	—	46	6·2	—	9	1	4	2	—	2	18	2·4	132	17·9
Lewisham	164,438	—	17	9	—	—	—	—	9	2	—	37	2·9	—	2	—	2	2	—	1	7	0·6	180	14·3
Woolwich	129,506	—	17	12	—	3	—	2	8	1	—	43	4·3	—	2	1	2	6	1	—	12	1·2	155	15·6
Port of London	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—	—

* Including membranous croup.

Southwark, and Wandsworth. The 50 deaths from diphtheria were 11 in excess of the corrected average number. The greatest proportional mortality from this disease was recorded in Hammersmith, Poplar, and Greenwich. The 141 deaths from whooping-cough were 8 above the corrected average number, the highest death-rates from this disease being recorded in Islington, Shoreditch, Bethnal Green, Poplar, Southwark, and Woolwich. The 2 deaths from enteric fever were 4 below the corrected average number, and belonged to Islington and Woolwich respectively. The 63 deaths from diarrhœa and enteritis among children under 2 years of age were equal to the corrected average number; the greatest proportional mortality from this cause was recorded in Paddington, the City of Westminster, Finsbury, Shoreditch, Bethnal Green, Poplar, and Southwark. In conclusion, it may be stated that the aggregate mortality in London last month from the principal infectious diseases was 27·8 per cent. below the average.

Obituary.

ARNOLD WILLIAM WARRINGTON LEA, B.Sc. VICT., M.D., B.S. LOND., F.R.C.S. ENG.,

CONSULTING SURGEON, NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, MANCHESTER, ETC.

Dr. Arnold Lea, who died at Manchester on May 7th, in his forty-ninth year, was the eldest son of Mr. Edward Lea, of Sandbach. Educated at Parkhurst School, Buxton, he had a brilliant career as a medical student at the Owens College, Manchester, obtaining two gold medals in the London M.B. examination and honours in the B.S. Later on he took his degree as doctor, became a Fellow of the Royal College of Surgeons of England, and graduated in science in the Victoria University. After holding resident appointments in Manchester and at the Queen Charlotte's Hospital, London, he was appointed lecturer on midwifery and diseases of women at the Owens College, and soon after was elected to the honorary staff of St. Mary's Hospitals and of the Northern Hospital for Women and Children in Manchester.

Holding these public appointments Arnold Lea rapidly acquired an extensive consulting practice and took a leading part in the gynæcological world. He published a large number of papers connected with his special work, the most important being a monograph on "Puerperal Infection" published in 1910. It is probable that the long hours and the lack of sleep associated with the production of this book in the midst of a busy surgical practice were contributory factors to the serious organic nervous disease which finally proved fatal.

It may be truly said that Arnold Lea's chief interest in life was his work, which was to him his hobby. Not very keen on the usual outdoor sports, although in his earlier professional days he was devoted to rock climbing in Switzerland and our own Lake district, he yet had many interests outside his work. Sociology, literature, and travelling always appealed to him, and his scanty leisure was generally spent on the continent exploring new countries and gaining fresh experiences. He possessed to a marked degree the faculty of friendship, and to a wide circle of practitioners who sought his assistance he was much more than the specialist—he was a friend and a brother. He married in 1913 Miss Lillias Thompson McTaggart.

An intimate friend writes of him:—"Before the cloud settled down over his personality during the last year or two of his life the friendship of Arnold Lea was a precious thing. In him the springs of character welled up pure and strong, and hence came the impulse of his thirst for knowledge and passion for action in all the varied fields of his mind and work. It is difficult now to recall how many and varied those interests really were, and how in some fashion or other the interest was never suffered to exhaust itself in mere thought but always issued in appropriate action, whether in the formation of a new society, as the University Sociological Society, or in his consideration for the feelings and even the weaknesses of others. His was a delightful social personality, abounding in talk of all kinds, incident, anecdote, argument, and a rich fund of humour underlying all and ever coming to the surface even in serious talk, and including the ability to laugh heartily at himself. Of more serious things, James's 'Religious Experiences' appealed strongly to his penetrating mind, in which difficulties were realised clearly enough, though he never doubted that natural forces were everywhere subservient to supernatural."

Correspondence.

"Audi alteram partem."

METEOROLOGY AND MEAN SOLAR TIME.

To the Editor of THE LANCET.

SIR,—In accordance with the provisions of the Summer Time Act Greenwich mean time will continue to be used for all meteorological observations and publications, so that no discontinuity will be caused during the period when summer time is in force. But besides the observations which are made by regular observers many meteorological phenomena of various kinds are from time to time recorded or reported, and it is highly desirable that there should be no ambiguity in these reports which are often of much interest and importance. The Council of the Royal Meteorological Society desire to draw attention to the necessity of stating precisely the time of occurrence in all such cases and whether the times quoted refer to Greenwich mean time or to summer time, since the omission of this information may render the record of the phenomenon useless for meteorological purposes.

Such occasional observations form a valuable addition to those which are made at the permanent observing stations and supplement them usefully; it is therefore essential that they should be recorded with precision.

I am, Sir, yours faithfully,

H. G. LYONS,

May 19th, 1916. President, Royal Meteorological Society.

SOME PERFORATIONS AT OR NEAR THE PYLORUS:

NOTES OF A CASE WHICH OCCURRED IN A BATTLE-CRUISER IN THE NORTH SEA.

To the Editor of THE LANCET.

SIR,—Mr. W. H. Battle's interesting and important observations on this subject, published in THE LANCET of April 29th, prompt me to send you the following notes:—

On Oct. 1st, 1914, a single man, aged 31, a private, R.M.A., joined H.M.S. *New Zealand*. He was seen in the sick-bay the same day, in the ordinary routine of the ship, and as he was obviously ill he was at once put on the sick list and turned in in the bay. He was very emaciated, and the superficial veins of his legs and abdomen were dilated. He gave a long history of abdominal pain and of vomiting directly after meals. These attacks occurred about every six weeks and lasted three or four days. He had one attack of hæmatemesis two years before. He was a teetotaler. Between Oct 1st and 5th he had slight abdominal pain, but was otherwise fairly comfortable in his bunk. The ship was now at sea engaged in battle practice with the rest of the battle-cruiser squadron. It was decided to send the man ashore to hospital directly on our return. On Oct. 5th, at 10 A.M., he vomited two pints of cocoa which he had taken at 7 A.M., and a third pint was vomited at 1 P.M. The sea was not rough. The upper part of his abdomen was tender and resistant. The liver dullness was normal. No enlarged glands were detected. The heart, lungs, and urine were normal. It was considered that he had a carcinoma of his pylorus. He was extremely emaciated and ill, and it is a remarkable thing that he so escaped medical observation as to be sent to join the ship. On Oct. 6th, at 6 P.M., sudden very violent pain in the abdomen seized him as he lay quietly in his bunk. He was in agony, dripping with perspiration. Ruptured stomach was diagnosed and operation determined upon. No further examination was attempted at the moment. At 7 P.M. he was still in extreme pain, in spite of morphine, and a little chloroform was administered. At 7.30 P.M. we were ready to operate. A rapid examination at this time demonstrated abolition of liver dullness, and movable dullness in the flanks was determined. Laparotomy through a mid-line incision above the umbilicus was performed. Gas and stomach contents escaped from the peritoneal incision. The extreme pyloric end of the stomach was found to be enormously hypertrophied, being considerably larger than a golf ball and of almost cartilaginous consistence. In the front of this mass and towards the lesser curvature was a rupture one and a half inches long. The walls of the cleft were nearly half an inch thick. The stomach was not particularly dilated. There were many adhesions between the liver and the mass. A probe passed through the rent entirely failed to enter the pyloric canal. No enlarged glands were detected, but it was still considered that we were dealing with malignant disease. The rent was brought together with mattress sutures, with purse-string sutures superimposed. The difficulties were considerable. Posterior gastro-jejunostomy was abandoned

after the stomach had been brought through the transverse meso-colon, as much because we had no proper clamp as because of the patient's condition. Staff-Surgeon J. R. A. Clark-Hall, who was giving the ether, and giving it very ably, considered that no time should be lost in closing the abdomen. This was done as rapidly as possible, a tube being passed down to the site of rupture. A second tube was passed through a stab incision into the pelvis. Owing to an oversight, only straight needles could be found, and these only were used throughout! The Fowler position was adopted, and rectal salines administered. On Oct. 7th salines and nutrients were given alternately by enema every two and a half hours. On Oct. 8th there was some hiccough, but the general condition was good. The Admiral had been unable to send the ship back to the base, as we had urged on Oct. 6th, and now we had to decide whether we should carry on with our gastro-jejunostomy. It will be recalled that we had failed to find any opening into the pyloric canal from the stomach. On Oct. 9th the man vomited three-quarters of a pint of very acid bile-stained fluid.

On Oct. 10th his condition was so satisfactory when I took him on board the *Rohilla* that I had some slight difficulty in persuading Staff-Surgeon T. C. Litler Jones, R.N.V.R., to operate further. I gained my point, however, possibly by urging that I had forgotten to sew up the hole which was made in the transverse meso-colon. Anterior gastro-jejunostomy through a lateral incision was performed that afternoon, and we were able to see that there were no traces whatever of peritoneal infection, and also that the mass alluded to above had diminished to about half its former size. The site of the rupture was entirely satisfactory. The incisions, upper and lower, were closed. I did not see the man again, but Staff-Surgeon Litler Jones wrote saying that he died on Oct. 15th. The necropsy showed no evidence of general peritonitis, as I understand him, but there was a "pelvic abscess."

I am indebted to Fleet-Surgeon C. H. Rock, R.N., for much kindness in connexion with this case and the operation. It will be admitted that efficient work in preparing for grave operations at sea during war, and able nursing afterwards, redound very greatly to the credit of the sick-berth staff, and also to the organising qualities of the senior medical officer.—I am, Sir, yours faithfully,

HILDRED CARLILL, M.A., M.D. Cantab., &c.,
Temporary Surgeon, R.N.; Neurologist, Royal Naval Hospital, Haslar.

THE INFLUENCE OF SEASON UPON THE BIRTH-RATE.

To the Editor of THE LANCET.

SIR,—At a meeting of the Historical Section of the Royal Society of Medicine in December last Dr. Raymond Crawfurd, dealing with superstitions concerning menstruation,[1] discussed the influence of season upon the sexual functions of the human species. He showed some evidence for the view that there was originally a single sexual season in the year, comparable to that of the pairing of many animals, and that this had been extended under the operation of civilisation and domesticity until little variation during the 12 months was left.

The returns of births should illustrate this point. By the courtesy of the Registrar-General's Superintendent of Statistics I have obtained some information of interest. The statistics of births in England and Wales are, unfortunately, of but little use for this purpose on account of the delay, up to six weeks, allowed by statute prior to registration; moreover, they are only tabulated for the quarters of the year. The returns of other European countries in which prompt registration is exacted—I am told that the limit in France is three days—are of more value, and they are given in some fulness in the admirable French official report, "Statistique Internationale du Mouvement de la Population" (Paris, vol. ii., 1913). These returns generally agree in showing an excess of births above the average in the early months of the year, especially in February and March. The number falls during the summer, but there is a curious rise in most countries for the month of September; after this it declines sharply to the lowest point, which is commonly reached in November, and then rises again to reach the maximum point early in the following year. The extent of the variations differs much in different lands; thus, generally speaking, they are slight, that is, the number of births is more uniform throughout the year, in northern civilised countries, such as Scandinavia, France, and Germany; whilst the variations are larger, showing a marked seasonal curve, in the south and east of Europe—in Spain, for instance, and the Balkan States. Looking back over the records of 30 or 40 years, one notes a general tendency for the variations to become less and the curve to become more uniform. The following countries may be taken in illustration. In each case the months of lowest and highest birth registrations are given, the figures stated being proportional to the mean monthly number taken as 1000; the period chosen comprises the years 1906–10.

Germany ...	952 (Nov.)	...	1046 (March)
Sweden ...	946 (Nov.)	...	1074 (Sept.)
France ...	924 (Nov. and Dec.)	...	1090 (March)
Italy	919 (June and Dec.)	...	1120 (Feb.)
Japan... ...	741 (June)	...	1392 (March)
Serbia ...	584 (Dec.)	...	1336 (Feb.)

The greater influence of season in states of less advanced civilisation or of warmer climate is apparent from these figures. The conceptions corresponding to the births will have taken place about nine months earlier. We find, therefore, a period from April to July, especially May and June, when conceptions were more frequent in all countries, together with a second rise in frequency in the month of December. The former period is that of the spring and early summer, when under the influence of increased sunlight and warmer temperature organic life of all kinds is more active.

Two factors in the returns should receive some separate notice—the influence of season on marriages and on illegitimate births respectively. With regard to the former, the number of marriages registered reaches a maximum in many countries about April or May. In other lands the influence of religious prescription completely alters the curve, certain festal seasons of the year having become chosen by long custom for the solemnization of the rite. In Serbia, where this is perhaps most strongly rooted, there were in the years 1906–10 but four marriages in December, in proportion to 3660 in November. In countries where religious festivals have less place the curve for marriages follows in a general way that for births, and, like it, has tended to show less and less variation from a uniform mean as time has gone on. The returns of illegitimate births show seasonal variations similar to those of the total births, but they are more strongly marked. It is easy to understand that conceptions which are the result of unregulated impulses are the more likely to vary with seasonal conditions. The proportion of illegitimate births is, of course, much larger in some countries than in others; where such births are numerous they exaggerate the seasonal curve of the total births. The greater number of births in the month of September, that is, of conceptions in December, remains to be accounted for, and it is attributed with much probability to the Christmas season. The September rise is especially high in Sweden, Norway, and Germany, where Christmas festivities are much observed.

As to the influence of civilisation, Is there a well-marked sexual season among savage peoples? Dr. Crawfurd made some references to the Esquimaux and to the natives of Queensland, indicating that such a season had been observed among these tribes in the spring. Prinzing has entered with much care into the subject in his "Handbuch der Medizinischen Statistik" (1906), and states that no distinct pairing time is found in uncivilised races, although they show the same seasonal variations found in the civilised, and to a much greater degree. Prinzing's summaries of births for each month in the year, compiled from the returns of many countries over a period of more than 70 years, agree substantially with the French tables already quoted in the general curve displayed.

It is to be regretted that in England and Wales we are still behind the other nations in our slack method of registering births. There seems to be no reason why this should not be speeded up by an amending statute. The returns of births registered in the four quarters of the year since 1838, as published in the last annual report of the Registrar-General, show the following features. At first the maximum number was recorded in the first quarter, indicating a majority of conceptions in the second quarter, April to June. As the years went on the maximum was shifted on to the two next quarters, where the latest returns place it, indicating the more frequent conceptions in the two later quarters, or, allowing for delay in registration, from June to November. Had we details for the several months we might see some probable explanation. The steady diminution in the number of illegitimate births may affect the results shown. These births were in England and

[1] THE LANCET, Dec. 18th, 1915, p. 1335.

Wales, in 1870–72, in the proportion of 17 annually to 1000 unmarried and widowed females of ages 15 to 45 years; in 1906–10 the proportion had fallen to 8·1.

The subject of seasonal influence on the birth-rate has not escaped the attention of statisticians from the time of Moreau (1778) onward; Bertillon is amongst those who have written upon it. Upon the whole the evidence makes it probable that man, or his ancestor, had once a single pairing season in the spring of the year, and that in process of ages under the conditions of civilisation and domesticity the sexual activities became independent of season. These activities still show marks of the influence of the seasons, marks which are stronger in the case of less civilised nations, in warmer climates, and outside of wedlock; and slighter in the case of the more civilised, in colder temperatures, and amongst the married —I am, Sir, yours faithfully,

Devonshire-place, W., May 16th, 1916. R. HINGSTON FOX.

TARTAR EMETIC IN THE TREATMENT OF CEREBRO-SPINAL FEVER.

To the Editor of THE LANCET.

SIR,—The publication by Sir Leonard Rogers of his success in kala-azar by the intravenous injection of tartar emetic led me to think that it might be useful in cerebro-spinal fever also. Half a grain administered in two cases here has produced very beneficial results. A daily remitting temperature, which, as is so often the case, had existed for some weeks, fell to normal in 60 hours, and has remained so, and headache has disappeared, with much of the vertebral stiffness removed. Two other cases appear to be going in the same direction. I write this thus early in the experiment in hopes that others may try the remedy while cases are still available.

I am, Sir, yours faithfully,

SHEFFIELD NEAVE,

Ipswich, May 22rd, 1916. Temporary Captain, R.A.M.C.

TYPHOID FEVER OR WHAT?

To the Editor of THE LANCET.

SIR,—Whether typhoid fever or not, the case to which the following note refers was in some respects so anomalous as to appear worthy of a brief record.

The patient, an active business man, aged 43, after partaking of jugged hare at a restaurant on Jan. 4th last, was unable to get the taste out of his mouth for several days. On Jan. 12th he felt seriously unwell and had a slight rise of temperature. From Jan. 12th to Jan. 26th the symptoms were those of a moderately severe case of typhoid fever, with evening temperatures gradually rising to 104°, morning remissions of from 1° to 2°, four or five loose motions daily, and occasional muttering delirium. The eruption, which almost completely covered the abdomen between Jan. 22nd and Jan. 26th, was more acuminated than is usual in typhoid fever. The headache was more severe than I remember ever to have known it in typhoid, and the blood gave a negative Widal reaction on Jan. 24th. During the period of maximum severity from Jan. 26th to Jan. 30th—whilst there was deep coma, subsultus tendinum, laboured breathing, and profuse perspirations—the bowels were constipated, requiring active aperients, and the urine contained large quantities of albumen. No additional spots came out at this time or afterwards. Tested on Jan. 29th, the blood again gave a negative Widal reaction. Defervescence began on Jan. 30th and went on steadily, though interrupted once or twice by rises of temperature caused by rather extensive sloughing over the sacrum. The blood reaction was negative to Widal's test on Feb. 3rd and to paratyphoids A and B on Feb. 9th.

As regards diagnosis, a well-known hospital physician, who saw the case on Jan. 22nd, thought that at that time everything pointed to typhoid fever. On Feb. 9th, although not, I think, very fully informed as to the course of events in the interval, he wrote that, "notwithstanding the negative results of the tests, he supposed it must have been typhoid fever." Till Jan. 28th I regarded it as a pretty obvious case of typhoid. After that date, without, perhaps, being able fully to account for my change of view, I considered the illness almost certainly not typhoid. Were we to adopt the latter view provisionally we might attribute the eruption to the large doses of potassium bromide which the patient had been having for the relief of headache, though it is difficult to understand why, if so caused, the spots did not appear on the face as well as on the body.

I am, Sir, yours faithfully,

London, May 8th, 1916. I. B. M.

THE GENERAL COUNCIL OF MEDICAL EDUCATION AND REGISTRATION.

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TUESDAY, MAY 23RD.

THE Council began its summer session at its new offices, 44, Hallam-street, W., on Tuesday, May 23rd, Sir DONALD MACALISTER, the President, being in the chair.

New Members.

The following new members were introduced and took their seats:—Professor H. Harvey Littlejohn, M.B. (as representative for the University of Edinburgh), Professor Johnson Symington (as representative of the Queen's University of Belfast), and Professor Andrew Francis Dixon, M.B., Sc.D. (as representative of the University of Dublin).

President's Address.

The PRESIDENT, in his address, commented upon the new premises in Hallam-street, where he said the work of the Council would be thriftier as well as handier, and regretted the death of Sir William Turner before the transfer, in which he took so deep an interest, was completed. At this point Sir Donald MacAlister presented to the Council a bust of his distinguished predecessor, the original for the marble in the Anatomical Museum at Edinburgh by Mr. Herbert Hampton.

The President then referred sympathetically to the death of Sir Charles Bent Ball and regretted the retirement of Sir William Whitla, while welcoming to the Council Professor Dixon and Professor Symington in their stead, and Professor Harvey Littlejohn in the room of Sir Thomas Fraser. He reported also that the General Registrar was still absent on military duty and had been promoted to the rank of Lieutenant-Colonel, while his work was being most ably discharged by Mr. A J. Cockington as Acting Registrar. He continued:—

The necessary demands of these services for qualified medical officers continue to put a severe strain on the resources of the profession. The Central and Local Committees, which have now been established in the three kingdoms and recognised for recruiting purposes by the military authorities, are actively engaged in endeavouring to meet these demands, and at the same time to leave a fair provision for the medical needs of the civil population. The task is not easy. It calls for much careful consideration of individual persons, places, and circumstances. This could hardly be given under any general scheme of conscription or by any but professional committees in touch with practitioners throughout the country. The value of the work already done by these committees is acknowledged by the War Office and the Admiralty. The greater the support and confidence extended to them by the profession, the better they will be able to carry through their important operations for the good of all.

It had been expected that in 1915, the first complete year since the war began, the number of practitioners added to the Register, and available for military or civil work, would show a perceptible decrease. The expectation would probably have been realised but for the decision to recall from the combatant ranks medical students of the senior years, and but for the establishment of reciprocity with the Dominions and with Belgium. In the result it came out that the number of registrations in 1915 was 1526, or 354 in excess of the average (1172) for the preceding five years. Of the whole number, 181 appear in the Colonial List and 88 in the Foreign List.

The question of maintaining, in this and in future years, a supply of newly qualified practitioners, sufficient for the needs of the country, continues to engage the attention of the military authorities and of the Council. The calling-up of junior medical students, under the successive systems of recruiting, has undoubtedly given rise to some anxiety. Inquiries were accordingly made, at the instance of Lord Derby, as Director-General of Recruiting, in order to ascertain the facts of the situation. From returns obtained by the Council last January, it appeared that the number of students who during 1915 began medical study in the various professional schools and teaching institutions was 1935. The number of first-year women students was 456. The number of second-year students was 1020. The average annual

entry of first-year students registered during the preceding five years was 1441. In 1915 there were thus nearly 500 first-year medical students in excess of the average annual number registered in the preceding five years.

At the beginning of the present year the number of first-year students in actual attendance on instruction at medical schools (apart from teaching institutions) was ascertained to be 1626. The expected depletion of students, as compared with normal years, had thus been more than compensated by new entries, and if things remained as they were, the position four years hence would not be unsatisfactory. It was thought advisable, however, to recommend that exemption from military service, already conceded to fourth-year and fifth-year students, should be extended to third-year students who showed their proficiency in the earlier subjects of the curriculum by passing a third-year professional examination in March or April, at the end of the winter session. An Order to this effect was accordingly issued from the War Office. Lord Derby then asked the Executive Committee to appoint a small committee, including two representatives nominated respectively by the President of the Board of Education and the Secretary for Scotland, for the purpose of watching the general situation as regards Great Britain, and reporting upon it to him as Director-General of Recruiting. In view of the fact that under the attestation and the compulsory systems many of the medical students of 1915 would by April have been called from their studies, Lord Derby further requested that returns should be obtained of the numbers belonging to each of the five years who were in actual attendance on professional courses of instruction at the beginning of the present summer session. The replies to my inquiries on this head, for which I have to thank the authorities of the schools of medicine and teaching institutions, were returnable on May 18th. They are not yet complete, and they have not been fully analysed. But the Council will be interested to learn that so far as they go they give the following results:—Students still pursuing their professional studies in May, 1916: First year, 1800; second year, 950; third year and fourth year, 1750; final year, 950. The expected depletion is most marked in the third-year and fourth-year group. Owing to the Order I have mentioned, many third-year students are reckoned with fourth-year students for recruiting purposes, and the group cannot readily be divided. Your Committee propose to call Lord Derby's attention to this group, as its present depleted condition indicates that a shortage of newly qualified practitioners may be expected by the end of the year 1918.

The representations made to the Government on your behalf respecting the Scottish Midwives Bill were effective. The Bill, which was properly regarded as an emergency measure, became law on Dec. 23rd, 1915. The Scottish Board has since been duly constituted, and the first set of rules for the enrolment of midwives has, after submission to the Executive Committee, been approved by His Majesty in Council.

Revised rules, framed by the Central Midwives Board under the English Act with a view to the better training and supervision of certified midwives, will be submitted to the English Branch Council during the present session. They indicate that the policy of the Central Board is progressive, and that its aim is to increase the efficiency of midwives. In the present emergency the responsibilities of these women must necessarily become greater, and it is the more imperative that the State and the profession should take steps to ensure their entire fitness. That some practitioners have not yet realised their duty with respect to the operations of women, who are *not* certified as fit to attend mothers in childbirth, is strongly suggested by cases brought before you at the last and at the present session. The Council will doubtless be prepared to consider whether the time has not come to issue a special warning notice on this subject.

In Scotland an important legal precedent has been established by a decision, on appeal, of the Court of Session. A limited company carries on in Edinburgh an objectionable form of unqualified practice under the style of the "Dr. Temple Company." The Royal College of Physicians, with Dr. Norman Walker, its treasurer, has succeeded in obtaining a perpetual interdict against the company, restraining it from using the word "Dr." and so pretending to the public that it possessed some medical title to practise. The Royal College has thus vindicated its claim to intervene for the protection of the people of Edinburgh against a gross form of imposition. Company law and administration in England have hitherto failed to check similar abuses. The civic spirit of the Royal College merits our cordial recognition, and its success may well encourage other corporations to re-examine their powers in respect of the medical interests of the public. In another Scottish court a pretender to medical qualifications who attempted to obtain money by falsely assuming a medical title has been sentenced to three months' imprisonment, apparently without the option of the fine for mere false assumption provided in Section 40 of the Medical Act, 1858. This also may prove to be a useful precedent in extension of the meagre safeguards of the statute.

The exigencies of the war have induced certain of the Canadian Provinces to reconsider their position with regard to Imperial reciprocity. In November I reported that Ontario and Saskatchewan had ranged themselves with the Eastern Provinces. Now I report that legislation for the establishment of reciprocal relations has been effected in Manitoba, and is proceeding in British Columbia. The Province of Alberta alone remains outside the movement. It has expressed a desire for reciprocity, but, so far, we have not learned that it has taken the necessary action. When it does, the Dominion of Canada will, province by province, have fulfilled the conditions laid down in the Medical Act, 1886. There will then be no obstacle to the application of that Act by His Majesty to Canada as a whole, and to our recognition, for purposes of registration here, of the diploma in medicine, surgery, and midwifery, granted after examination by the Canada Medical Council. The whole problem of Canadian qualifications would thus at once receive a satisfactory simplification.

The Empire of Japan, whose university degrees in medicine have long been registrable, has now decreed that in October, 1916, the new law on medical practice, intimated to the Council ten years ago, will come into effective operation. The Japanese authorities will then be able to guarantee that the degree of Bachelor of Medicine, granted by specified medical colleges under Government direction or supervision, will represent a qualification not inferior to the corresponding university degree. The Executive Committee will consider the question of adding this college degree, granted under the new conditions, to the list of qualifications registrable in the Foreign List.

Reports may be expected, from the respective committees, on the teaching of medical ethics, the revision of the dental curriculum, and other topics of interest.

New Committees

The Business, Pharmacopœia, Finance, Dental, Dental Education, and Penal Cases Committees were appointed.

The Executive Committee was appointed as follows:—Dr. Norman Moore, Sir Henry Morris, Mr. Tomes, Dr. Langley Browne, Mr. Hodsdon, Dr. Norman Walker, Sir John Moore, and Sir Arthur Chance.

WEDNESDAY, MAY 24TH.

The Council resumed, and the whole sitting was devoted to the consideration of penal cases.

Lady Fayrer, widow of the late Sir Joseph Fayrer, died recently at Falmouth. The deceased lady, who was in her eighty-second year, had resided at Falmouth for many years.

ROYAL WEST SUSSEX HOSPITAL.—**The cheerful** experience of the Chichester Hospital is that for the first time for many years the income has exceeded the expenditure by no less a sum than £1011, excluding all legacies. The reception of wounded soldiers and gifts from Australia are the reasons assigned for this successful year's working. When the war broke out the hospital provided 30 beds for wounded soldiers, but by the use of the balconies for open-air treatment, the results of which have been excellent, this number was increased to 50, and during the year 258 sick and wounded non-commissioned officers and men were medically treated. The claims of the civilian population of the city and a wide district have not been allowed to suffer in any way owing to the demands of the military situation, and this is another very satisfactory feature of the hospital's work. It should be added that in addition to the Royal West Sussex Hospital there is also at the cathedral city the large war hospital at Graylingwell, besides another hospital at the barracks.

The War.

THE CASUALTY LIST.

THE following names of medical officers appear among the casualties announced since our last issue :—

Killed.

Captain A. C. A. Jekyll, R.A.M.C., attached to the Royal Scots, was an M.B. of Sydney University, New South Wales, and joined the R.A.M.C. in March, 1915.

Wounded.

Lieutenant W. J. E. Stuttaford, R.A.M.C., attached to the London Regiment.

Captain H. A. Pallant, R.A.M.C., attached to the Loyal North Lancashire Regiment.

DEATHS AMONG THE SONS OF MEDICAL MEN.

The following sons of medical men must be added to our lists of those who have fallen during the war :—

Second Lieutenant A. G. Mitchell, Royal Irish Rifles, son of Mr. A. B. Mitchell, F.R.C.S.I., of Belfast.

Captain A. B. Crawford, West Yorkshire Regiment, son of Dr. A. D. Crawford, of Stanton Hill, Mansfield, Notts.

H. K. de W. Harvey, Australian Imperial Force, eldest son of Mr. J. H. Harvey, M.R.C.S., L.R.C.P., of Wyke Regis, Dorset.

Second Lieutenant G. V. Daunt, South Lancashire Regiment, youngest son of Dr. F. E. H. Daunt, of Clapham, London.

Colonel Bradley, Major Lyster, Major Ford, and Surgeon Pleadwell, of the United States Army and Navy Medical Services, reached London last Saturday on an official visit of inspection.

OBITUARY OF THE WAR.

AINSLIE BOOTH, M.B., B.CH. OXON.,

LIEUTENANT, ROYAL ARMY MEDICAL CORPS.

Lieutenant A. Booth, who fell in action on April 30th, was 30 years of age and the only son of the Very Rev. L. P. Booth, D.D., for many years Dean of St. John's, Kaffraria. He was educated at Marlborough and Keble College, Oxford, entering the medical school of St. Thomas's Hospital and taking his degrees of M.B. and B.Ch. Oxon. in 1912. He married Miss Barlow, of Oxford, and shortly afterwards left for South Africa to practise his profession there. Immediately upon the declaration of war he was mobilised as captain in the South African Medical Corps, and served through the Orange Free State Province rebellion and the German South-West Africa campaign. On its successful conclusion he returned to England, acted for a short time as temporary medical officer at the Herts County Asylum, Hill End, St. Albans, and while there obtained a commission as Lieutenant in the Royal Army Medical Corps in November, 1915. He died while doing his duty. A man was badly wounded by shell fire and Lieutenant Booth went out under fire to his assistance. He was then hit himself, being immediately rendered unconscious, and died soon afterwards. A medical friend writes of him: "The early death of Lieutenant Booth is a great loss to the medical profession. He was a man who made friends wherever he went and who was keen and well fitted for his work."

GEORGE FLETT BARR, M.B., CH.B. GLASG.,

CAPTAIN, ROYAL ARMY MEDICAL CORPS.

Captain George Flett Barr, who died in France on March 23rd, of cerebro-spinal meningitis, at the age of 25 years, was the eldest son of the late Mr. James Barr, of Paisley. Educated at the John Neilson Institution, Paisley, and the Glasgow High School, he studied medicine at Glasgow University. At school and college he excelled in outdoor sports. Graduating in 1914 with distinction in surgery, he then filled the posts of house surgeon and house physician at the Royal Alexandra Infirmary, Paisley, and subsequently that of resident medical officer at the Paisley Burgh Isolation Hospital, and assistant to the burgh medical officer of health. In the earliest days of the war he offered his services and received a commission in the Royal Army Medical Corps, being recently promoted to a captaincy. Varied and arduous work fell to his lot in France, but superiors and colleagues alike speak of its cheerful and conscientious performance. He was taken ill on March 19th, and died four days later. His associates, both in civil and military work, held Captain Barr in sincere affection for his strong and gentle personality, and the words of his commanding officer may fittingly close this notice of him: "I never found him fail in the least respect."

THE MILITARY SERVICE BILL: THE INSTITUTION OF PROFESSIONAL COMMITTEES.

On the motion of Lord Sandhurst, on Monday in the House of Lords, the following clause was inserted in the Bill :—

Regulations made under the second schedule to the principal Act shall provide for the establishment of professional committees to deal with claims for exemption made by duly qualified medical practitioners; and any application made by such a medical practitioner on any ground, other than that of conscientious objection, for a certificate of exemption shall be referred by the tribunal to whom it is made to such a committee in accordance with those regulations; and the recommendation of the committee on the application shall be binding on any tribunal constituted under the principal Act.

Lord Sandhurst was acting in behalf of the Army Council, and the Bill, which will receive the Royal assent this week, contains his valuable amendment. It is also definitely stated that the War Office will recognise, as the professional committees mentioned in the new clause, the Central Medical War Committee, the Reference Committee of the Royal College of Physicians of London and the Royal College of Surgeons of England, and the Scottish Medical Service Emergency Committee. An Order in Council, under the new clause, with the Regulations, will be issued at once.

THE SALE OF NARCOTIC DRUGS TO SOLDIERS.

The order made by the Army Council prohibiting the sale of narcotic drugs to members of His Majesty's Forces, and defining the conditions under which such drugs may be prescribed and dispensed, provides yet another instance of an innovation, long advocated in years of peace, being secured without controversy under the stimulus of a great war. Hitherto the existing law has been unable to touch such a gross offender as appeared recently at Bow-street on a charge of hawking cocaine snuff in a London street, while the more elastic procedure under the Defence of the Realm Act is capable of producing at once a drastic improvement. The Army Order lays down the following precise conditions under which a member of the forces can obtain cocaine or other specified narcotic drugs. The drug must

now be ordered for him by a registered medical practitioner on a written prescription, dated and signed by the practitioner with his full name and qualifications, and marked with the words, "Not to be repeated," and the person selling or supplying the drug must mark the prescription with his name and address and the date on which it is dispensed. The articles to which this Order applies are as follows: Barbitone, benzamine lactate, benzamine hydrochloride, chloral hydrate, coca, cocaine, codeine, diamorphine, Indian hemp, opium, morphine, sulphonal and its homologues, and all other salts, preparations, derivatives, or admixtures prepared therefrom or therewith. It is a misfortune for the civil population not to be similarly protected by Statute.

BENEVOLENT FUNDS FOR THE SERVICES AUXILIARY TO THE ROYAL ARMY MEDICAL CORPS.

We have already called attention to the proposal for establishing some kind of benevolent organisation for the benefit of the families of medical officers in the Special Reserve, the Territorial Force, and the new armies. A meeting, to be presided over by the Director-General, will be held in the Royal Army Medical College, Grosvenor-road, S.W., at 2.45 P.M., on Thursday, June 1st, at which it is hoped there will be a large attendance of officers now serving.

Medical News.

ROYAL COLLEGES OF PHYSICIANS OF LONDON AND SURGEONS OF ENGLAND.—At a meeting of the Comitia of the Royal College of Physicians of London on April 27th, and of the Council of the Royal College of Surgeons of England on May 11th, diplomas of L.R.C.P. and M.R.C.S. were respectively conferred upon 99 candidates (including six ladies) who have passed the necessary examinations and complied with the by-laws of the Colleges. The following are the names and medical schools of the successful candidates:—

Hannah Katherine Alton, Calcutta Medical College and Royal Free Hospital; **Kevin Doyle Atteridge**, St. Bartholomew's Hospital; **John Aydon**, Cambridge University and St. Bartholomew's Hospital; **Arthur James Bado**, St. Thomas's Hospital; **Harold John Bensted**, Guy's Hospital; **David Simon Brachman**, Pennsylvania University and St. Bartholomew's Hospital; **John Prichard Bracken**, University College Hospital; **Ingram Richard Rhodes Brogden**, Cambridge University and Guy's Hospital; **Arthur Stanley Carter**, Middlesex Hospital; **Henry Hutton Castle** and **Louis Arthur Celestin**, St. Thomas's Hospital; **George Edwin Chissell**, Middlesex Hospital; **Hester Mary Church** and **Mabel Campbell Clarke**, Royal Free Hospital; **Ailwyn Herbert Clarke**, St. Thomas's Hospital; **Percy Selwyn Clarke**, St. Bartholomew's Hospital; **Hyman Maurice Cohen**, College of Physicians and Surgeons, Baltimore, and Manchester University; **Walter Herbert Coldwell**, Westminster Hospital; **William Maurice Crombie**, St. Thomas's Hospital; **Robert Cecil Davenport** and **Spencer Graeme Dunn**, St. Bartholomew's Hospital; **Frederick Dunphy**, Westminster Hospital; **Maurice Dwyer**, Leeds University and St. Thomas's Hospital; **William Felix Eberli**, Cambridge University and St. Bartholomew's Hospital; **Arthur William Foster Edmonds**, Westminster Hospital; **Philip Oswald Ellison**, St. Bartholomew's Hospital; **Griffith Ifor Evans**, Oxford University and St George's Hospital; **Humphrey Silvester Evans**, Cambridge University and St. Thomas's Hospital; **Leonard Wynne Evans**, St. Bartholomew's Hospital; **William Farquharson**, St. Mary's Hospital; **Guy Fehrsen**, London Hospital; **Eric Alfred Fiddian**, Cambridge University and St. Bartholomew's Hospital; **Sidney William Fisk**, University College and Middlesex Hospitals; **Maurice Rolfe Vickers Ford**, Sheffield University; **Andrew Radburne Fuller**, St. Mary's Hospital; **Douglas Hugh Aird Galbraith**, Guy's Hospital; **Gloster Tyndall Garraway**, University College Hospital; **Sures Chandra Ghose**, Calcutta Medical College and St. Mary's Hospital; **Charles Cunliffe Goodall**, Cambridge University and London Hospital; **Frederick Harold Sellick Greenish**, Cambridge University and London Hospital; **Ethne Haigh**, Durham University; **John Charles Neville Harris**, Cambridge University and St. Thomas's Hospital; **Spenser Frederick Harris**, London Hospital; **Arthur Noel Haworth**, Charing Cross Hospital; **Nathan Norris Haysom**, St. Bartholomew's Hospital; **William Andrew Hotson**, Westminster Hospital; **Ernest Gwyn Howell**, University College, Cardiff and St. Thomas's Hospital; **George Philip Buckingham Huddy**, London Hospital; **Edith Caroline Hudgell**, Royal Free Hospital; **Samuel Hutchinson**, University College Hospital; **Thomas Henry Jackson**, Charing Cross Hospital; **Bhaputsinhj Bhugvatsinhji Jareja**, Cambridge University and St. Thomas's Hospital; **William George Johnston**, St. Mary's Hospital; **Arthur Maddock Jones**, Charing Cross Hospital; **Tom Jones**, Cambridge and Manchester Universities; **Vladimir Kameneff**, Moscow, Edinburgh, and University College Hospital; **Teng Liang Kan**, St. Thomas's Hospital; **Robert Percival Langford-Jones**, University College Hospital; **Edward Eric Lightwood**, Westminster Hospital; ***Charles William Berry Littlejohn**, Melbourne and Oxford Universities and St. Bartholomew's Hospital; **Harold Bishop Logan**, Bristol University and University College Hospital; **Peter George McEvedy**, Guy's Hospital; **Showkiram Sahijram Malkani**, Bombay University and University College Hospital; **Philip Sydney Marshall**, University College Hospital; **Francis Courtenay Mason**, Middlesex Hospital; **Adeline Mabel Matland**, Royal Free Hospital; **Bagenal Harvey Mellon**, Dublin; **Hickman Walter Lancelot Molesworth**, London Hospital; **Telford David Morgan**, Cambridge University and London Hospital; **Arthur Geoffrey Morris**, Bristol University; **Geoffrey Moulson**, St. Thomas's Hospital; **Sinnethamby Muttiah**, London Hospital; **Kathira Velu Muttukumaru**, Madras University and Middlesex Hospital; **Frank Newey**, Birmingham University; **Donald Craig Norris**, London Hospital; **Alexander Jeremiah Orenstein**, Jefferson Medical College and London Hospital; **Frank Cunliffe Ormerod**, Manchester University; **Philip Esmond Durrell Pank**, Cambridge University and London Hospital; **Gilbert Eugene Paul**, Madras University and Middlesex Hospital; **Ronald Rees Powell**, Cambridge University and St. Bartholomew's Hospital; **Jagan Nath Puri**, London Hospital; **Harrie Maxwell Quackenbos**, Jefferson Medical College and University College Hospital; **Raghavendra Rau Damodar**, Madras and Middlesex Hospital; **Charles Reginald Reckitt**, London Hospital; **Baron Theodore Rose**, Birmingham University; **Percy Gunn Russell**, Middlesex Hospital; **Morris Schwartz**, University College Hospital; **Denys Munro Smith**, Bristol University; **William Steadman**, University College Hospital; **Harold Game Stormer**, St. Thomas's Hospital; **George Carson Swanson**, Glasgow University; **Hugh Watts Taylor**, London Hospital; **Douglas George Clutsam Tasker**, Bristol University; **Granville Burnett Wild**, Manchester University; **Richard Willoughby Willenberg**, Ceylon Medical College and Manchester University; **Alfred Williams-Walker**, Birmingham University; **Geoffrey Commeline Williams**, Cambridge and Bristol Universities; **Cuthbert Edward Wise**, Lausanne University and University College Hospital; and **Reginald Salisbury Woods**, Cambridge University and St. George's Hospital.

* Diploma of M.R.C.S. conferred on April 13th.

SOCIETY OF APOTHECARIES OF LONDON.—At examinations held recently the following candidates were successful in the subjects indicated:—

Surgery.—**H. H. Bailey** (Section II.), London Hospital; **A. Glen** (Sections I. and II.), Glasgow and Sheffield; **H. M. Hobson** (Section I.), London Hospital; and **E. G. D. Murray** (Sections I. and II.), Cambridge and St. Bartholomew's Hospital.

Medicine.—**H. H. Bailey** (Sections I. and II.), London Hospital; **P. C. C. Fenwick** (Sections I. and II.), St. Thomas's Hospital; **R. F. Jarrett** (Section I.), London Hospital; **E. G. D. Murray** (Section I.), Cambridge and St. Bartholomew's Hospital; **L. F. Pain** (Sections I. and II.), Royal Free Hospital; and **M. B. M. Tweed** (Sections I. and II.), Guy's Hospital.

Forensic Medicine.—**R. F. Jarrett**, London Hospital; **L. A. B. Moore**, Guy's Hospital; **E. G. D. Murray**, Cambridge and St. Bartholomew's Hospital; **A. W. North**, Birmingham and London Hospital; and **L. F. Pain**, Royal Free Hospital.

Midwifery.—**M. Dwyer**, Leeds and St. Thomas's Hospital; **H. T. Lamb**, Manchester and Guy's Hospital; **E. A. Leak**, Cambridge and London Hospital; **A. W. North**, Birmingham and London Hospital; **S. L. Szpigner**, London Hospital; **M. B. M. Tweed**, Guy's Hospital; and **H. St. H. Vertue**, Oxford.

The Diploma of the Society was granted to the following candidates, entitling them to practise medicine, surgery, and midwifery:—**M. Dwyer, A. Glen, A. W. North**, and **L. F. Pain**.

ROYAL COLLEGE OF SURGEONS OF EDINBURGH.—At a meeting of the College held on May 18th the following gentlemen, having passed the requisite examinations between Jan. 3rd and 5th, 1916, were admitted Fellows:—

Dines Chandra Chakravati, **William Wallis Hoare**, **George Robert Livingston**, **Alfred Charles Sandston**, **Neil Frederick Sinclair**, **Herbert M'Lean Staley**, and **Muhammed Abdul Wajid**.

At the same meeting the Bathgate Memorial Prize, consisting of a bronze medal and a microscope, was, after a competitive examination in Materia Medica, awarded to Miss Marguerite Robertson Stirling. The Ivison Macadam Memorial Prize in Chemistry, consisting of a bronze medal and a set of books, was awarded, after competitive examination, to Miss Janet Grant.

CENTRAL MIDWIVES BOARD.—A meeting of the Central Midwives Board was held at Caxton House, Westminster, on May 18th, with Sir Francis H. Champneys in the chair. Further correspondence with Dr. E. J. Maclean, of Cardiff, was considered with regard to the acceptance of the curriculum and system of training which he proposes to adopt in connexion with the Glamorgan County free midwifery students as a compliance with the requirements of the new Rules C. 1 and 2. The Board directed that Dr. Maclean be informed that the rules require (C. 1 (1)) that each candidate must have "undergone a course of training in midwifery extending over a period of not less than six months." The Board considers that the scheme for Cardiff as set forth by Dr. Maclean does not provide for six months' training, inasmuch as during part of the course the candidates are attending lectures only. A letter was also considered from a midwife to whom the Board has granted approval to train midwives on the condition that she undertook to train only one pupil at a time, asking that this restriction may now be removed to the extent of allowing her to train two pupils at one time. The Board directed that the restriction imposed not to train more than one pupil at a time be now removed, subject to a report from the local supervising authority that her house is suitable for the accommodation of two pupils. A letter was

considered from Professor T. W. Arnold, C.I.E., educational adviser to Indian students, asking the Board to admit to examination Mrs. Batra, a Hindoo lady, who is unable to furnish certificates of birth or of marriage. The Board decided that the matter be left to the chairman to deal with. A letter was considered from a certified midwife, calling the attention of the Board to the difficulty of securing the attendance of a medical practitioner when sent for in an emergency on the advice of a midwife. The Board decided that the certified midwife be informed that the Board takes note of her communication.

ROYAL ALBERT HOSPITAL, DEVONPORT.—As a result of the recent house-to-house collection for the Royal Albert Hospital the sum of £820 has been raised for the funds of that charity, and in addition promises of weekly, monthly, and annual subscriptions have been obtained.

THE PROPOSED SCHOOL OF MEDICINE FOR JOHANNESBURG.—An important meeting representative of the medical profession in the Transvaal was held recently in the hall of the South African Institute for Medical Research, Johannesburg. The object of the gathering is expressed in the first resolution, which was unanimously adopted:—

That in the opinion of this meeting of the medical profession of this province, the time has now arrived when, in the interests of the community, a School of Medicine should be established in the Transvaal, with facilities for the granting of diplomas.

It was further resolved to communicate the foregoing to the Prime Minister (General Botha), the Minister of Education, and all Members of Parliament. In moving the principal resolution Dr. W. Watkins-Pitchford, Director of the Institute, prefaced his remarks with the statement that Johannesburg had a European population larger than any other town in South Africa, and that it is essentially an industrial town. Its total population at the present time is 237,000 of which one half—119,000—are Europeans. For the purposes of higher education, Dr. Watkins-Pitchford pointed out, it is obvious that the smaller towns of the Rand, from Randfontein in the west to Springs in the east, should be associated with the central town of Johannesburg, and these being included the total population became 430,000, of which 206,000 are white people. In Johannesburg alone, he said, there are more than twice, and on the whole of the Witwatersrand more than four times, as many people as there were in Leeds when its medical school was established. He pointed out that the number of hospital beds on the Witwatersrand is about 8170, representing a wealth of material for clinical instruction which is unequalled throughout the world. There are some 520 medical practitioners registered in the Transvaal, of whom 240 obtained their qualifications in Scotland, 172 in England, 58 in Ireland, 43 held diplomas obtained in various other countries, including three from Canada and two from Australia, and there are five practitioners who have no qualifications other than the licence of the late Government of the South African Republic.

DONATIONS AND BEQUESTS.—The late Dame B. M. Baker, who left estate valued about £11,000, has bequeathed, after various personal bequests have been paid, the residue to form an endowment fund for the Newton Abbot Hospital, "in memory of Sir Samuel and Lady Baker."—Mr. Sam Gamble, of Manchester, has set aside the sum of £5,000 to be devoted to the purpose of assisting needy medical students at the University of Manchester. The gift will be available for women who have passed their first medical examination, on the condition that they are Christians and total abstainers.—The Royal Dental Hospital, Leicester-square, has received a donation of £400 from the trustees of Smith's (Kensington Estate) Charity and £100 from the executors of the late Mr. William Johnston.

BOOKS, ETC., RECEIVED.

BAILLIÈRE, J. B., ET FILS, Paris.
Gynécologie. By Professor E. Forgue and Professor G. Massabau. (Nouveau Traité de Chirurgie, Vol. XXXIV.) Price 25 fr.

CAMBRIDGE UNIVERSITY PRESS, Cambridge.
The Purpose of Education. By St. George Lane Fox Pitt. New edition, with Preface by Professor Émile Boutroux. Price 2s. 6d. net.

CHAPMAN AND HALL, London.
Back to the World. By Mary Wall. Price 6s. net.

GREEN, W., AND SONS, Edinburgh.
Encyclopædia Medica. Vol. III.: Chloroform to Dyspnœa. Under General Editorship of J. W. Ballantyne, M.D., C.M., F.R.C.P. Edin. Second edition. Price 20s. net.

UNIVERSITY PRESS, Oxford.
Daubeny Laboratory Register, 1904-1915. With Notes on the Teaching of Natural Philosophy and with Lists of Scientific Researches carried out by Members of Magdalen College, Oxford. By R. T. Günther, M.A., F.L.S.

Parliamentary Intelligence.

NOTES ON CURRENT TOPICS.

Medical Men and Military Service.

A MOST important clause has been introduced into the Military Service Bill in the House of Lords to provide that medical men who are within the age of compulsory military service will have their claims for exemption dealt with by professional bodies and not by the ordinary tribunals. The new clause is in the following terms:—"Regulations made under the second schedule to the principal Act shall provide for the establishment of professional committees to deal with claims for exemption made by duly qualified medical practitioners, and any application made by such a medical practitioner on any ground, other than that of conscientious objection, for a certificate of exemption shall be referred by the tribunal to whom it is made to such a committee in accordance with those regulations, and the recommendation of the committee on the application shall be binding on any tribunal constituted under the principal Act."

The clause was subsequently submitted to the House of Commons, and was agreed to by 163 votes to 42. It therefore became a part of the Bill as it is presented for the Royal assent.

HOUSE OF COMMONS.

WEDNESDAY, MAY 17TH.

Medical Officers of Voluntary Military Hospitals.

Captain DOUGLAS HALL asked the Under Secretary for War whether, in view of the fact that it was now proposed to give commissions and grant military rank to officers of volunteer corps, the War Office was prepared to grant similar privileges to medical officers in charge of voluntary military hospitals.—Mr. TENNANT answered: Commissions have already been given to all medical men doing work which renders military rank necessary. It is not proposed to recommend any further extension of the granting of temporary commissions in the R.A.M.C. except under this principle.

Invalid Combatant Prisoners.

Replying to Sir H. ELVERSTON, Sir EDWARD GREY (Foreign Secretary) wrote: An agreement has been arrived at with the German Government for the transfer to Switzerland of British and German wounded and invalid prisoners of war who are ineligible for repatriation under the agreement affecting incapacitated prisoners of war. The agreement is on the lines of that already existing between France and Germany.[1]

Burials and Public Health.

Mr. GLANVILLE asked the Colonial Secretary whether he had received a telegram on Thursday, May 11th, from the Secretary to the British Undertakers' Association requesting that there should be no further depletion of their staffs, as it would endanger the national health if during the forthcoming summer there should be delay in burying the dead, especially in infectious cases; and what had been his reply thereto.—Mr. BONAR LAW answered: I did receive the telegram referred to, and the point raised in it was considered.

THURSDAY, MAY 18TH.

Red Cross Societies' Work in Irish Rising.

In the course of a reply to Mr. GINNELL, Mr. TENNANT (Under Secretary for War) said that the House would be glad to learn that members of all Red Cross societies rendered valuable and impartial assistance to all wounded, whether civilians, troops, or rebels, in the recent Irish rising.

Transfer to Switzerland of Prisoners of War.

Mr. BLISS (on behalf of Mr. THEODORE TAYLOR) asked the Foreign Secretary what steps the Swiss Government had taken to put into operation the recent agreement as to the transfer of British prisoners from Germany to Switzerland and German prisoners from Great Britain to Switzerland.—Sir EDWARD GREY replied: It is understood that the Swiss Government are taking all necessary steps to put the agreement referred to into operation. Arrangements are being made to intern the British prisoners of war at Chateau d'Oex. Four Swiss medical commissions, consisting of two medical officers each, are starting for this country on May 20th to examine the German prisoners, and it is expected that the Swiss medical commission which is to examine the British prisoners in Germany will leave Berne on the same date. I should like to take this opportunity of expressing publicly the gratitude of the country and His Majesty's Government to the Swiss Government for the cordial and ungrudging assistance which they have given from the outset towards the establishment of this scheme.

[1] THE LANCET, April 29th, 1916, p. 936.

Mr. BLISS asked the Under Secretary for War what steps were being taken by the War Office to bring into operation at the earliest possible moment the agreement under which British prisoners were to be transferred from Germany to Switzerland and German prisoners from Great Britain to Switzerland.—Mr. TENNANT answered: In order that there may be no avoidable delay an agreement has just been made with the German Government whereby the selection of those who are unquestionably included in the category of disabilities as justifying transport to Switzerland may be made by the medical authorities of the country where the prisoners are interned. The necessity for the majority of medical men on those selection boards being of Swiss nationality will be waived in this fresh selection. The necessary instructions have been issued.

Chauffeurs of Medical Men.

Mr. BOYTON asked the Under Secretary for War whether he was aware of the difficulty experienced by consulting surgeons who devoted the whole or part of their time to work at the various military hospitals in getting chauffeurs of non-military age to drive their motor cars; and whether the War Office would find soldiers to drive the cars of such physicians and surgeons as might apply and be approved.—Mr. TENNANT said in reply: It would not be possible to release soldiers for this work. I am told that women drivers have been employed in certain cases, and I suggest this is the solution of the difficulty. At the same time may I express my warm appreciation of the valuable assistance which is being given by consulting physicians and operating or consulting surgeons at the various military hospitals.

Milk-supply at Haslar Hospital.

In the course of lengthy replies to Mr. W. NICHOLSON on the milk-supply at Haslar Hospital, Mr. MACNAMARA (Secretary to the Admiralty) said: The hospital authorities have very efficient arrangements for supervising and analysing the milk- and other food-supplies, which are considered adequate to detect any defects in quality of the deliveries. The Admiralty, however, welcomes any assistance which the county council inspectors are able to give in the ordinary course of their duties.

Certifying Factory Surgeons.

Mr. MCCALLUM SCOTT asked the Home Secretary whether the recommendation of the Retrenchment Committee to discontinue the reporting of accidents by certifying factory surgeons was made after receiving information from the Home Office as to the value of the evidence of an independent surgeon, who had examined and interrogated the injured person, in determining the causation of preventible factory accidents, and as to the value to an injured person of an independent and skilled opinion; and whether the Department proposed to act upon the recommendation.—Mr. HERBERT SAMUEL answered: The Committee took evidence from the Home Office before making their report. The question of the value of the certifying surgeon's inquiries is a matter for discussion which had better perhaps be reserved till the Bill I am proposing to introduce is before the House. Meantime, I would refer the honourable Member to the report of the Accidents Committee of 1911.

MONDAY, MAY 22ND.

Lower Infantile Mortality.

Mr. ANDERSON asked the President of the Local Government Board whether the rate of infantile mortality in London and some other towns was causing anxiety to those concerned with local administration; whether he had received any communication recently on this matter from the London County Council; and what steps, if any, the Local Government Board were taking to enforce thorough and comprehensive schemes for child and maternity welfare.—Mr. LONG answered: I am glad to say that the number of infant deaths in London and the large towns is lower this year than the average of the five preceding years, and the infantile death-rate for London itself for the first quarter of 1916 was lower than that of the corresponding quarter during each of the last ten years. My attention has been drawn to a resolution which was to be moved at the last meeting of the London County Council on this subject, but I have not yet received any communication from them. My department are taking active steps, and with much success, to induce local authorities to adopt and carry out comprehensive schemes for maternity and child welfare. Such schemes are now working in nearly all the large towns and throughout a number of counties.

Mr. ANDERSON asked the Parliamentary Secretary to the Board of Trade whether he was aware that in various districts of London the price of milk had been advanced to 6*d.* per quart; that there was no scarcity of milk, and that these prices, whilst yielding high profits to farmers and milk vendors, were aggravating the problem of infantile mortality among the children of the poor; and whether the Government, by legislation or otherwise, proposed to take any steps in the matter.—Mr. PRETYMAN replied: I understand that the rise from 5*d.* to 6*d.* a quart is confined to certain districts in London. I am causing inquiries to be made as to this matter, and will let my honourable friend know the result.

Watering London Streets.

Sir GODFREY BARING asked the President of the Local Government Board whether his attention had been called to the decision of certain metropolitan boroughs to abandon, in the interests of economy, street watering during the coming summer; whether this step had been taken in consequence of any advice by the Board or had received its approval; whether his medical advisers, having regard to the need for the safeguarding of the health of the public, endorsed this policy of the borough councils; whether provincial boroughs were adopting the same line of action; whether he could state approximately the amount of the money-saving to the public; and whether, if he had not done so, he would set on foot an investigation into the desirability or the reverse of this new municipal innovation.—Mr. LONG replied: I have seen references in the press to a proposal of certain metropolitan borough councils to abandon street watering during the coming summer, and I will cause some inquiry to be made into the matter. My advisers would not endorse a policy which involved such a stoppage, but they would probably agree that there are cases where the amount of watering done in ordinary times might be reduced without risks. I have not heard of the abandonment of street watering by provincial authorities. My honourable friend will realise that in the circumstances I cannot give any estimate as to the probable money-saving.

Dr. H. O'Donoghue.

Mr. W. O'BRIEN asked the Under Secretary for War whether he was aware that Dr. Henry O'Donoghue, a citizen of Dublin, who had never had anything to do with extreme politics, left his home in Leeson Park on Easter Monday evening to render any assistance in his power to wounded people and had not since been heard of by his family; whether Dr. O'Donoghue was arrested and had since been deported, without any form of trial or examination; and, if so, whether any redress would be given for this treatment of a medical man while engaged in tending the wounded.

Mr. FLAVIN also asked the right honourable gentleman whether he was aware that Dr. Henry O'Donoghue, of Leeson Park, Dublin, left his home on Easter Monday to render medical aid to the wounded people in Dublin; whether he had been arrested by the military authorities in Dublin and deported to some place in England; and whether he would have immediate inquiries made about Dr. O'Donoghue with a view to his release.—Mr. TENNANT replied: I shall answer both questions together. I am informed that orders were given for the release of Dr. H. O'Donoghue on May 19th, and he is now, I believe, at liberty. It appears that Dr. O'Donoghue presented himself at Dublin Castle and said he came to offer his services as a medical man and was brought before the Provost Marshal before any steps were taken to allow him to assist in treating the wounded. He was then found to be in the possession of Sinn Fein literature, and was put under arrest. This was on April 24th. He was sent to hospital on April 26th, and having been discharged, was readmitted on April 30th, and again discharged from hospital on May 4th. He was subsequently sent to Stafford on May 8th. I have not received particulars of the subsequent investigation, but, as I have stated, orders were given for the release of Dr. O'Donoghue.

TUESDAY, MAY 23RD.

The Scottish Women's Hospital.

Mr. POLLOCK asked the Under Secretary for War whether the offer of the Scottish Women's Hospital to place a unit at the disposal of the Government for service in Mesopotamia had not been accepted; if so, whether this decision was taken on grounds particular to that offer, or whether it indicated a general rule to refuse similar offers; and, if so, what was the reason for this decision, in view of the fact that similar hospital units had proved their value in France, Serbia, Malta, and Salonika.—Mr. TENNANT wrote in reply: It is a fact that the Scottish Women's Hospital was offered for service in Mesopotamia and was refused. The Government of India has been informed that all necessary hospital equipment and personnel will be supplied on demand from army services, and there is no need for the employment of small voluntary hospital units.

WEDNESDAY, MAY 24TH.

Medical Men and Military Service.

The Lords' amendments to the Military Service Bill were considered.

Mr. LONG (President of the Local Government Board) moved that the House do agree with the Lords in an amendment inserting a new clause in the Bill setting up special committees to deal with claims for exemption from medical men. He said that this clause was the result of

an arrangement between the War Office and representatives of the medical profession throughout the country, the negotiations in respect to which had not concluded when the Bill left the House of Commons. The object was to see that while the needs of the Royal Army Medical Corps were properly met, the requirements of the civil population were also dealt with with care and discrimination.

Mr. KING said that much more valid reasons should have been advanced for a proposal of this kind. If the desire was to make it easier for medical men to get exemption, why not make provisions by which they should have a special ground for claiming exemption before the ordinary tribunals? There did not seem to him any reason why medical men should have special tribunals any more than lawyers, grocers, undertakers, farmers, or agricultural labourers. He criticised bitterly the action of the War Office and its medical department, and estimated that 40 to 50 per cent. of the medical service in the army was being wasted.

Several other Members having criticised the clause, mainly on the ground that there was no reason for the constitution of a special tribunal for medical men,

Mr. LONG explained that the reason why no court of appeal was allowed was because such a court was impossible in the case of a purely *ad hoc* body of this kind. The main object of the proposal was to ensure that a proper balance was kept between the needs of the army and those of the civil population in respect of the available supply of medical men.

Mr. R. MCNEILL did not see that medical men were any better qualified to determine these cases than the ordinary tribunals with the advice of special professional committees.

Mr. CHARLES ROBERTS (speaking on behalf of Mr. LONG) urged that a special medical tribunal was much better than the ordinary tribunals for the purpose. Its members would know the medical needs of the district better than an ordinary tribunal, and they would be better able to decide in regard to cases of financial hardships. If it were left to the ordinary tribunals chaos and confusion would result.

Mr. J. M. ROBERTSON approved of setting up professional committees.

On a division the House, by 163 votes to 42, agreed to the insertion of the amendment in the Bill.

Appointments.

Successful applicants for vacancies, Secretaries of Public Institutions, and others possessing information suitable for this column, are invited to forward to THE LANCET *Office, directed to the Sub-Editor, not later than 9 o'clock on the Thursday morning of each week, such information for gratuitous publication.*

BEDWELL, Mr., has been appointed Public Vaccinator for Hayle, Cornwall, by the Redruth Board of Guardians.

CARRUTHERS, N. S., L.R.C.P. Lond., M.R.C.S., Certifying Surgeon under the Factory and Workshop Acts for the Acle District of the county of Norfolk.

CRAGG, E. H., L.R.C.P. Lond., M.R.C.S., Certifying Surgeon under the Factory and Workshop Acts for the Billingborough District of the county of Lincoln.

GLOVER, V. J., M.D. Liverp., Ch.B. Vict., Medical Officer of Health for the Waterloo and Seaforth U.D.C., and Schools Medical Officer.

HILLYER, W. H., M.D. Durh., Certifying Surgeon under the Factory and Workshop Acts for the East Grinstead District of the county of Sussex.

SIMPSON, T. YOUNG, M.D., M.S. Durh., F.R.C.S. Edin., Chirurgien Chef to the Hôpital Anglais, 249 bis, Rhône, France.

Vacancies.

For further information regarding each vacancy reference should be made to the advertisement (see Index).
When the application of a Belgian medical man would be considered the advertisers are requested to communicate with the Editor.

BRADFORD, ROYAL EYE AND EAR HOSPITAL.—Non-resident House Surgeon or paid Clinical Assistant.

BRISTOL ROYAL HOSPITAL FOR SICK CHILDREN AND WOMEN.—Female House Physician. Salary £150 per annum, with board, &c.

BURNLEY, VICTORIA HOSPITAL.—Female House Surgeon. Salary £160 per annum, with residence, &c.

BURY INFIRMARY.—Female Junior House Surgeon. Salary £150 per annum, with board, &c.

CHESTERFIELD AND NORTH DERBYSHIRE HOSPITAL.—Second House Surgeon. Salary £150 per annum, with board, &c.

COLCHESTER, ESSEX COUNTY HOSPITAL.—Ophthalmic Surgeon.

DEWSBURY COUNTY BOROUGH.—Female Medical Practitioner. Salary £300 per annum, &c.

DUDLEY, GUEST HOSPITAL.—Assistant House Surgeon for six months. Salary at rate of £120 per annum, with board, &c.

EXETER, ROYAL DEVON AND EXETER HOSPITAL.—House Physician for six months. Salary at rate of £150 per annum, with board, &c.

HASTINGS, EAST SUSSEX HOSPITAL.—House Surgeon. Salary £150 per annum, with board, &c.

HUDDERSFIELD ROYAL INFIRMARY.—Senior House Surgeon and Assistant House Surgeon. Salaries £150 and £100 per annum, with board, &c

LIVERPOOL, BROWNLOW HILL INSTITUTION.—Resident Assistant Medical Officer. Salary at rate of £300 per annum, with rations, &c.

LEEDS GENERAL INFIRMARY.—Resident Aural Officer. Salary £100 per annum, with board, &c.

LONDON TEMPERANCE HOSPITAL, Hampstead-road, N.W.—Assistant Resident Medical Officer for six months. Salary at rate] of £120 per annum, with board, &c.

MANCHESTER, COUNTY ASYLUM, Prestwich.—Locum Tenens. Salary £7 7*s.* per week.

MANCHESTER NORTHERN HOSPITAL FOR WOMEN AND CHILDREN, Parkplace, Cheetham Hill-road.—Female House Surgeon. Salary £120 per annum, with apartments, &c.

METROPOLITAN HOSPITAL, Kingsland-road, N.E.—Surgeon for Diseases of Women.

MIDDLESBROUGH, NORTH ORMESBY HOSPITAL.—Assistant House Surgeon. Salary £150 per annum, with board, &c.; or Senior Student, £100 per annum.

PLYMOUTH, SOUTH DEVON AND EAST CORNWALL HOSPITAL.—House Surgeon. Salary £250 per annum, with board, &c.

PRESTON, LANCS. COUNTY ASYLUM, Whittingham.—Assistant Medical Officer. Salary £250 per annum, with board, &c.

QUEEN CHARLOTTE'S LYING-IN HOSPITAL, Marylebone-road, N.W.—Pathologist and Registrar. Salary at rate of £80 per annum and lunch.

RUSSIAN UNITS, NATIONAL UNION OF WOMEN'S SUFFRAGE SOCIETIES, 14, Great Smith-street, Westminster.—Junior Medical Women for Work among Refugees in Russia.

ST. GEORGE'S HOSPITAL, S.W.—Radiographer. Salary at rate of £100 per annum.

SHEFFIELD ROYAL INFIRMARY.—House Physician. Salary £120 per annum, with board, &c.

SOUTH LONDON HOSPITAL FOR WOMEN, 88-90, Newington-causeway, S.E.—Temporary Female Assistant Physician for six months. Salary 10*s.* 6*d.* for each attendance.

VENTNOR, ISLE OF WIGHT, ROYAL NATIONAL HOSPITAL FOR CONSUMPTION AND DISEASES OF THE CHEST.—Assistant Resident Medical Officer.

Births, Marriages, and Deaths.

BIRTHS.

BELL.—On May 18th, at Ravenscroft, Luton, Bedfordshire, the wife of Lieutenant R. D. Bell, R.A.M.C., of a daughter.

FARR.—On May 21st, at Watlington, Norfolk, the wife of C. C. J. Farr, M.R.C.S., L.R.C.P. Lond., of a son.

HIGGS.—On May 21st, at "Dunedin," Egmont-road, Sutton, Surrey, the wife of Major F. W. Higgs, M.D., R.A.M.C. (T.), of a daughter.

MILLS.—On May 16th, at Heath-street, Hampstead, N.W., the wife of Lieutenant E. Halford Mills, R.A.M.C., of a son.

WEIR.—On May 18th, at South Lodge, Merstham, Surrey, the wife of Walter Weir, M.B., B.S., M.R.C.S., L.R.C.P., of a son.

MARRIAGES.

RICE-OXLEY—MILLER.—On May 16th, at St. Mary Abbot's, Kensington, Douglas George Rice-Oxley, M.B., Captain, R.A.M.C. (T.), to Estelle Mortimer, only daughter of the late Robert Mortimer Miller and Mrs. Sidgwick, "Branksome," Ipswich.

RYLAND—MOORE.—On May 17th, at The Hirsel Private Chapel, Coldstream, N.B., Archer Ryland, F.R.C.S. Edin., Captain, R.A.M.C., to Gladys Mary, daughter of the Rev. C. A. Moore and Mrs. C. A. Moore, of The Hirsel, Coldstream, N.B.

TYRRELL—MEASHAM.—On May 9th, at All Saints' Church, St. John's Wood, by the Rev. C. S. Morton, M.A., Captain E. J. Tyrrell, R.A.M.C., to Grace Mary Measham, B.Litt., daughter of the late Rev. R. Measham, R.N., Rector of Bellingham.

DEATHS.

HILL.—On May 16th, at Warrington-crescent, Maida Vale, Dr. J. Shuter Hill, aged 60 years.

PASSMORE.—On May 21st, at The Cedars, Gainsborough, John Edmund Sanders Passmore, M.R.C.S., L.R.C.P., aged 57 years.

RIVERS-WILLSON.—On May 19th, at Oxford, Alfred Rivers-Willson, Ph.D., L.S.A., L.M.S.S.A.

N.B.—A fee of 5s. is charged for the Insertion of Notices of Births, Marriages, and Deaths.

METEOROLOGICAL READINGS.

(Taken daily at 8.30 a.m. by Steward's Instruments.)

THE LANCET Office, May 24th, 1916.

Date.	Barometer reduced to Sea Level and 32° F.	Direction of Wind.	Rainfall.	Solar Radio in Vacuo.	Maximum Temp. Shade.	Min. Temp.	Wet Bulb.	Dry Bulb.	Remarks.
May 18	30·370	S.W.	...	111	78	54	58	64	Fine
,, 19	30·426	S.E.	...	122	74	55	58	62	Fine
,, 20	30·306	S.E.	...	129	79	54	59	64	Fine
,, 21	30·180	S.W.	...	133	83	61	59	65	Fine
,, 22	30·070	S.	...	107	71	64	62	64	Cloudy
,, 23	30·150	S.W.	...	117	68	51	51	56	Fine
,, 24	29·880	S.E.	...	119	71	54	53	55	Fine

Notes, Short Comments, and Answers to Correspondents.

SUPERSTITION IN WARTIME.

To the Editor of THE LANCET.

SIR,—The prevalence of superstition in wartime is no new occurrence, as the "Angels of Mons" remind us. The following passages from letters on the subject of superstition by Sir Walter Scott, written in the year 1830, seem to me to be worth recording:—

Even in the field of death, and amid the mortal tug of combat itself, strong belief has wrought the same wonder, which we have hitherto mentioned as occurring in solitude and amid darkness; and those who were themselves on the verge of the world of spirits, or employed in dispatching others to these gloomy regions, conceived they beheld the apparitions of those beings whom their national mythology associated with such scenes. In such moments of undecided battle, amid the violence, hurry, and confusion of ideas incident to the situation, the ancients supposed that they saw their deities, Castor and Pollux, fighting in the van for their encouragement; the heathen Scandinavian beheld the Choosers of the slain; and the Catholics were no less easily led to recognise the warlike Saint George or Saint James in the very front of the strife, showing them the way to conquest. Such apparitions being generally visible to a multitude, have in all times been supported by the greatest strength of testimony. When the common feeling of danger, and the animating burst of enthusiasm, act on the feelings of many men at once, their minds hold a natural correspondence with each other, as it is said is the case with stringed instruments tuned to the same pitch, of which, when one is played, the chords of the others are supposed to vibrate in unison with the tones produced. If an artful or enthusiastic individual exclaims, in the heat of action, that he perceives an apparition of the romantic kind which has been intimated, his companions catch at the idea with emulation, and most are willing to sacrifice the conviction of their own senses, rather than allow that they did not witness the same favourable emblem, from which all draw confidence and hope. One warrior catches the idea from another; all are alike eager to acknowledge the present miracle, and the battle is won before the mistake is discovered. In such cases, the number of persons present, which would otherwise lead to the detection of the fallacy, becomes the means of strengthening it.

Of the disposition to see as much of the supernatural as is seen by others around two apposite instances may be quoted:—

The first is from the "Historia Verdadera" of Don Bernal Diaz del Castillo, one of the companions of the celebrated Cortez, in his Mexican conquest. After having given an account of a great victory over extreme odds, he mentions the report inserted in the contemporary Chronicle of Gomara, that Saint Iago had appeared on a white horse in van of the combat, and led on his beloved Spaniards to victory. It is very curious to observe the Castilian cavalier's internal conviction, that the rumour arose out of a mistake, the cause of which he explains from his own observation; whilst, at the same time, he does not venture to disown the miracle. The honest Conquestador owns that he himself did not see the animating vision; nay, that he beheld an individual cavalier, named Franciso de Morla, mounted on a chestnut horse, and fighting strenuously in the very place where Saint James is said to have appeared. But instead of proceeding to draw the necessary inference, the devout Conquestador exclaims, "Sinner that I am, what am I that I should have beheld the blessed apostle!"

The other instance of the infectious character of superstition occurs in a Scottish book:—

"In the year 1686, in the months of June and July," says the honest chronicler, "many yet alive can witness, that about the Crossford Boat, two miles beneath Lanark, especially at the Mains, on the water of Clyde, many people gathered together for several afternoons, where there were showers of bonnets, hats, guns, and swords, which covered the trees and the ground; companies of men in arms marching in order upon the water side; companies meeting companies, going all through other, and then all falling to the ground and disappearing; other companies immediately appeared, marching the same way. I went there three afternoons together, and as I observed there were two-thirds of the people that were together saw, and a third that saw not, and *though I could see nothing*, there was such a fright and trembling on those that did see, that was discernible to all from those that saw not. There was a gentleman standing next to me, who spoke as too many gentlemen and others speak, who said, 'A pack of damned witches and warlocks that have the second sight! the devil ha't do I see'; and immediately there was a discernible change in his countenance. With as much fear and trembling as any woman I saw there he called out 'All you that do not see, say nothing; for I persuade you it is matter of fact, and discernible to all that is not stone blind.' And those who did see told what works (i.e. locks) the guns had, and their length and wideness, and what handles the swords had, whether small or three-barr'd, or Highland guards, and the closing knots of the bonnets, black or blue; and those who did see them there, whenever they went abroad, saw a bonnet and a sword drop in the way."

I am, Sir, yours faithfully,
A MYSTIC.

HEALTH OF ST. LUCIA.

ST. LUCIA, the largest and most picturesque of the Windward Islands group, is situate at a distance of about 90 miles W.N.W. of Barbados, is 24 miles in length, with an extreme breadth of 12 miles, and comprises an area of 233 square miles. According to the annual report of the administrator, the Hon. Gideon Murray, just issued, the estimated population of the island at March 31st, 1915, was 51,590—23,768 males and 27,822 females. The birth-rate in 1914–15 was 33·9 per 1000 of the population, as against 34·5 in the previous year, whilst the death-rate was 18·7 per 1000, as against 17·4. Marriages numbered 225, a decrease of 52 as compared with 1913–14. All the medical officers report the health conditions of the year to have been favourable. The campaign against rats was systematically carried out, 2351 rodents being destroyed, and some useful anti-mosquito work was also accomplished. The use of "millions" fish was continued in practicable places, but as a good part of the year was unusually dry their usefulness was somewhat diminished. A hookworm campaign was commenced under the direction of Dr. Stanley Branch, a local district medical officer seconded for this purpose. The colony is much indebted to the International Health Commission for providing the necessary means to combat this devastating disease, so deleterious to the health and efficiency of the labouring classes. The average annual rainfall for the island, recorded at 24 stations, was 64·88 inches, as compared with 83·75 inches in the previous year, and the mean monthly temperature in the shade at the Botanic Station in Castries was 79·2° F. The Victoria Hospital at Castries is the one general hospital for the colony; it is a fine stone building, well situated, and has been considerably improved of recent years. The daily average number of patients was 76. Small buildings are provided in the out districts at Soufrière, Deanery, and Vieux Fort, which are used as casualty hospitals for accident and emergency cases. The Yaws Hospital at Malgretoute had a daily average of 47·03 patients. The voluntary influx of patients for treatment with salvarsan continued unabated, and 337 cases were treated during the year; the number would have been much greater but for a shortage in the supply of the drug. The medical officer in charge, Dr. A. F. Hughes, reports that out of 745 cases treated by him there had been only 32 instances of recurrence of the disease. In this connexion he refers to the difficulty of distinguishing between bona-fide recurrences and cases of re-infection.

MEDICAL NOTES ON HISTORICAL MANUSCRIPTS.

THE following excerpts are in continuation of those appearing on p. 1066 of our last week's issue.

A Doctor's Claim Resisted.—Robert Walmisley to Mr. Anthony Kempe, 1595, May 9.—I am urged to write unto you in another style than I am wont. I sent my man the other day for a pair of virginals which I lent your children to learn upon; you sent me word I shall have none. You say that I owe you £100, that I am a cosener, a murderer, and that I have killed your wife. Thus you have to my great discredit abused me, such a friend as again you shall never find; abused yourself, being more ungrateful than a gentleman should; and make me recapitulate those things which will be no pleasure for you to hear. ..... First, being commended unto your wife by my good friends, she sent for me to cure her deafness and many other imperfections, when she had been so imperfected ten years before and had passed under the hands of the best physicians in London to no purpose. I perfected her health, brought her hearing, which continued four years till she died, by my continual counsel to preserve it, without any recompense from you; but even in the midst of my cure you used me most unkindly in receiving villainous reports of me, to the intent neither she should be cured nor I receive the reward of my well doing. Yet I, not then knowing what now I do, did in my love towards you in too much humility salve that with great patience; but the canker of your malice remaining, and peradventure being exasperated because I talked with a Jesuit priest in your house which you fostered to absolve you, who persuaded me to forsake my allegiance and not come to the churches here in England, but for this I should have been slain one night late, as you know, by your porter, who in shew you turned away, but presently after entertained him again, belike to do some like exploit, for I have heard somewhat arguing the same. ..... Then when the plague happened in your house, who would come to you but I? Did not all your most professed friends forsake you? But when you sent for me (because I loved you) I came, forsook all my friends and patients in London, only intended your good, preserved you and the rest of your house; yet when did you ever give me one fee or gratify me with one courtesy? but only that you sent for me into the country, where I tarried not long but came to London and was sent for again, your daughter Mary being like to die. So before I slept I returned unto you 50 miles, and saved your daughter's life, being infected with the pestilence. You then requited me I know how. You could not have had a physician in that time for the like cause for £20, yet my love carried me above my strength to satisfy all parts of a friend to you, and then you thought my skill good; but now, behold how you requite me! ..... I once in your gallery at Slindon did but name the seminary priest with whom I talked in your house at Blackfriars; you never afterwards could brook me, neither would you suffer your wife to be quiet till I was gone. Well, away I went, yet ceased not to do you any pleasure I could, and that I did you some I have your letter to shew. A year after, you coming to London, your wife fell sick. I cured her three times, who when she fell into relapse again, her body being weak and her mind sick, you had other physicians that gave her physic till she died (but thereby hangs a tale). In this time of her often sending for me I could never be at home, but with her; the good I had deserved at her hands did so much breed her good opinion of me. Now she is gone, to defraud me you lay unto my charge the having of £100, that I killed your wife, that I am a cosener, and that you will recover it to my shame. Whereas you have thus slandered me, I know what the law will give me in this case; satisfy yourself I will have recompense for my 10 weeks waiting on your wife, &c.

Sir Thomas Sherley to Sir Robert Cecil, 1595, May 18.—My uncle Anthony Kempe, a man that I love exceedingly, is most monstrously abused by a bad fellow, one Walmesley, a very dog leech, who doth practise physic without skill or licence. My uncle intending to make his complaint this day at the Council table will thereby inform you of the cause. My request is that you will be pleased for my sake to favour my uncle in his honest pretences, assuring you he is a most honest gentleman, and for his faith and loyalty towards the Queen's Majesty I dare engage myself as far as I am worth. The gentleman is very aged and even worn to the last; weak of spirit, quiet and softly of disposition; which no doubt hath encouraged that varlet to undertake his lewd practice.

Protest against action of the Company of Surgeons.—Pascall Lane to Sir Robert Cecil, undated (probably after 1596).—He is a surgeon in the parish of Savoy and Liberty of Westminster, who by foreign travel has got experience of the cure of many diseases. Although two years ago, upon the commendation of credible physicians and surgeons, he was licensed to practise by writing under the Archbishop of Canterbury's seal, to which Dr. Stanhope subscribed, yet notwithstanding the Company of Surgeons molest him, affirming none ought to practise surgery within seven miles of London unless he be of their Company or tolerated by them, and threaten to undo him. He prays for Cecil's letters to the Company for his permittance.

Outrage on the Body of a Doctor (1597).—A memorandum (no writer's name) stating that on Sunday, the 19th of April, M. Isaac de Laune, doctor of medicine, residing at Tonnere, in Burgundy, of the Reformed religion, died, respected by all right-minded men. His widow then sent to the "Administrateur" of the hospital to ask leave to bury him in one of the burial grounds within that hospital, where several Protestants had lately been buried, and this was freely granted. When this came to the ears of the dean of the parish of Notre Dame he went to the "Administrateur," with some monks of the hospital, and protested, although the dead man had been familiar with them in his life and was the usual and official doctor of the hospital. The widow and friends accordingly decided to bury the body by night to avoid giving any occasion for complaint. But when in the evening the funeral party were met, both Catholics and Protestants, news was brought that the monks of the hospital were prepared to resist by force the burial of the body, and that the dean, with a lot of bad characters, was about the town for the same purpose. Accordingly it was agreed to make a formal complaint the next day, and that the widow should have the body taken to Fielz, an estate of which she is part-owner, to be there buried. And so the party went away leaving only two women in the house. But the Dean and the mob, being disappointed by this decision, about midnight broke into the house, dragged the corpse into the market place up to the pillory, broke open the coffin, wounded the body with pointed sticks, put cards in one hand and dice in the other, and were about to put the body into the pillory if they had not been prevented by some disapprovers. They then took to insulting the body, threatening to throw it into the river with a paper on its back that this was a Huguenot on his way to England, and abusing it in other ways. In the morning the police and the "Echevins" came, most of whom had been violent partisans of the League; and, to show how little they cared for such matters, they had the body taken up by some peasants and buried without more ado in a dunghill, and did not even allow it to be first placed in the coffin. And then they went back to the widow and demanded payment for their trouble, threatening her that otherwise they would dig up the body and throw it to the dogs to eat; and they even contrived that no justice should be had without appealing to the King.

Distilled Waters.—Dr. W. Mount to Sir Robert Cecil.—From the Savoy, 1597-8, Feb. 8.—I will daily pray for the happy success of your service to your country in this great and ever memorable embassage, and that your goings out and comings in may be, with good health also to your father, comfortably performed. So much in my power may be, with your good leave, by presenting 2 glasses of compound distilled water I do endeavour—the one of cinnamon, the other of sage, both comfortable if at any time in your travel you shall find yourself in health not well affected; one spoonful or two at one time, with half so much sugar.

W. Smith to Sir Robert Cecil, 1599-1600, March 22.—My aged mother, being extremely tormented with a pain in her stomach, which no physic can remove, I would humbly ask you to give her a little of the distilled water which I brought from Florence and delivered to your honour; for I know the same to be of an excellent virtue and hope it will do her good. I have sent a little silver bottle by this bearer for the same.

The Earl of Shrewsbury to Sir Robert Cecil, 1602.—My infective against pancakes causeth my wife to send you a little glass of her cinnamon water, which is so small as you need not fear it will heat you at all, and if you had emptied your stomach a spoonful or two would do very well after it. Inflame it will not, for there is no wine in it, but common cinnamon in borage water only.

Insomnia Cured.—Sir William Cornwallis to Sir Robert Cecil, from Highgate, 11th May, 1599.—Upon Sunday last I was let blood, since which my fever left me and the extreme pain in my head, but I have so weak a stomach as I can taste no manner of meat to restore the ruin that my long abstinence hath made. I live by broths, barley, cream, and sometimes a little jelly. But that which makes me weary of my life, I cannot sleep all night. I have ridden in a furred nightgown round my poor garden this morning and mean to do again to-night, finding the air comfortable, and hope that will bring me to sleep.

The Same to the Same, from Highgate, this Wednesday, May 16, 1599.—Since I took my horse and the air, so weak I was I could scarce sit upon him, yet I found a present strengthening of my stomach. Yesterday (a sick man's fancy) I had a desire to go dine at Barnet, and thither I went, part by coach, part by horse, carrying with me my physician and two or three of my friends, lost £5 at premero, came home, supped like a weak man well, and slept with the medicine of the travel the most part of the night, which I did not before these 18 nights.

"Outward" Medicines for Gout.—Thomas, Lord Burghley, to Sir Robert Cecil, May 18, 1599.—I cannot accompany you to the marriage, as I would have been glad to do, because I have found a famous man that is said to have done very great cures of the gout here, and says that in four or five days he will make my foot as nimble as it was before I had it. I hope not for all his promises, but as his medicines are all outward there is no danger.

Lady R. Cecil's Illness.—Dr. Jo. Nowell to Sir Robert Cecil, 1599, July 23.—My Lady went to bed between 9 and 10; in her bed she took her cordial, which she kept not above half an hour. From 10 till 6 in the morning she hath slept every hour, drinking three times broth this night and other means to refresh her. Her looseness had not troubled her all night. Her water begins to be of a good colour again, with signs of concoction; her legs, being last night somewhat swollen, are now abated, the spot appearing to decay. Her heat is nothing so great as it hath been, neither inwardly nor outwardly. I trust her honour shall do very well; she is so tractable in anything ministered.

(To be concluded.)

THE EDUCATION OF THE ONE-ARMED.

To the Editor of THE LANCET.

SIR,—Can you put me into communication with a medical man having only one arm? I ought to add that my motives for desiring to communicate with him are strictly scientific, as I have suggested by the heading.

I am, Sir, yours faithfully,

May 22nd, 1916. UNIMANUS.

Captain, R.A.M.C.—Section 4 of the by-laws of the Royal College of Surgeons of England provides that the date of the election of Members of the Council shall be announced not less than 30 and not more than 40 days in advance, and that candidates for seats shall send in their nominations within ten days of the date of the announcement. Under the existing rules, therefore, the complete list of candidates cannot be known more than 30 days before the election, and hence the time is insufficient to allow of Fellows residing in remote parts of the Empire to record their votes. The by-law only provides that voting papers shall be sent to Fellows residing in the United Kingdom. Last year many Fellows serving abroad recorded their votes, the voting papers either being sent to them direct from the College or forwarded from their home address. The secretary of the College will send a voting-paper to any Fellow on active service whether ordinarily resident in Australia, Canada, or elsewhere, if he applies for one.

Medical Diary for the ensuing Week.

SOCIETIES.

ROYAL SOCIETY, Burlington House, London, W.

THURSDAY.—Papers:—Dr. T. J. I'a. Bromwich: The Scattering of Plane Electric Waves by Spheres.—Mr. J. Proudman, Mr. A. T. Doodson, and Mr. G. Kennedy: Numerical Results of the Theory of the Diffraction of a Plane Electromagnetic Wave by a Perfectly Conducting Sphere (communicated by Dr. T. J. I'a. Bromwich).—Mr. G. I. Taylor: Motion of Solids in Fluids when the Flow is not Irrotational (communicated by Prof. H. Lamb).

ROYAL SOCIETY OF MEDICINE, 1, Wimpole-street, W.

MEETINGS OF SECTIONS.

Tuesday, May 30th.

PSYCHIATRY (Hon. Secretaries—Bernard Hart, G. F. Barham): at 4 P.M.

Paper:

Mr. H. F. Stephens: The Compluetic Reaction in Amentia: an Original Study of 100 Cases.

Thursday, June 1st.

DERMATOLOGY (Hon. Secretaries—A. M. H. Gray, J. E. R. McDonagh): at 5 P.M.

Adjourned Discussion:

On Mr. J. E. R. McDonagh's paper on "The Rationale and Practice of Chemotherapy."

WEST LONDON MEDICO-CHIRURGICAL SOCIETY, West London Hospital, Hammersmith-road, W.

FRIDAY.—8.30 P.M., Paper:—Dr. J. Dundas Grant: Some Points of Practical Interest in the Diagnosis and Treatment of Diseases of the Throat, Nose, and Ear.

LECTURES, ADDRESSES, DEMONSTRATIONS, &c.

NORTH-EAST LONDON POST-GRADUATE COLLEGE, Prince of Wales's General Hospital, Tottenham, N.

MONDAY.—Clinics:—10.30 A.M., Surgical Out-patients (Mr. E. Gillespie). 2.30 P.M., Medical Out-patients (Dr. T. R. Whipham): Gynæcological Out-patients (Dr. Banister). 3 P.M., Medical In-patients (Dr. R. M. Leslie).

TUESDAY.—2.30 P.M., Surgical Operations (Mr. Carson). Clinics:—Medical Out-patients (Dr. A. G. Auld); Surgical Out-patients (Mr. Howell Evans); Nose, Throat, and Ear Out-patients (Mr. C. H. Hayton). Radiography (Dr. Metcalfe). 3.30 P.M., Medical In-patients (Dr. A. J. Whiting).

WEDNESDAY.—Clinics:—2.30 P.M., Throat Operations (Mr. C. H. Hayton). Children Out-patients (Dr. T. R. Whipham); Eye Out-patients (Mr. R. P. Brooks); Skin Out-patients (Dr. H. W. Barber). 5.30 P.M., Eye Operations (Mr. R. P. Brooks).

THURSDAY.—2.30 P.M., Gynæcological Operations (Dr. A. E. Giles). Clinics:—Medical Out-patients (Dr. A. J. Whiting); Surgical Out-patients (Mr. Carson); Radiography (Dr. Metcalfe). P.M., Medical In-patients (Dr. R. M. Leslie).

FRIDAY.—2.30 P.M., Surgical Operations (Mr. Howell Evans). Clinics:—Medical Out-patients (Dr. A. G. Auld); Surgical Out-patients (Mr. E. Gillespie); Eye Out-patients (Mr. R. P. Brooks). 4.30 P.M., Special Demonstration:—Mr. E. Gillespie: Intestinal Obstruction (illustrated by cases).

POST-GRADUATE COLLEGE, West London Hospital, Hammersmith-road, W.

MONDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Gray: Operations. Mr. B. Harman: Diseases of the Eye. Dr. Simson: Diseases of Women.

TUESDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Addison: Operations. Dr. Banks Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

WEDNESDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Banks Davis: Operations of the Throat, Nose, and Ear. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations. Dr. Simson: Diseases of Women.

THURSDAY.—2 P.M., Medical and Surgical Clinics. X Rays. Mr. Gray: Operations. Mr. B. Harman: Diseases of the Eye.

FRIDAY.—10 A.M., Dr. Simson: Gynæcological Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Addison: Operations. Dr. Banks Davis: Diseases of the Throat, Nose, and Ear. Dr. Pernet: Diseases of the Skin.

SATURDAY.—10 A.M., Dr. Saunders: Diseases of Children. Dr. Banks Davis: Operations of the Throat, Nose, and Ear. Mr. B. Harman: Eye Operations. 2 P.M., Medical and Surgical Clinics. X Rays. Mr. Pardoe: Operations.

THE THROAT HOSPITAL, Golden-square, W.

MONDAY.—5.15 P.M., Special Demonstration of Selected Cases.

THURSDAY.—5.15 P.M., Clinical Lecture.

ROYAL INSTITUTION OF GREAT BRITAIN, Albemarle-street, Piccadilly, W.

TUESDAY.—3 P.M., Dr. T. M. Lowry: Optical Research and Chemical Progress. (Lecture I.)

EDITORIAL NOTICES.

IT is most important that communications relating to the Editorial business of THE LANCET should be addressed *exclusively* "TO THE EDITOR," and not in any case to any gentleman who may be supposed to be connected with the Editorial staff. It is urgently necessary that attention should be given to this notice.

It is especially requested that early intelligence of local events having a medical interest, or which it is desirable to bring under the notice of the profession, may be sent direct to this office.

Lectures, original articles, and reports should be written on one side of the paper only, *and when accompanied by blocks it is requested that the name of the author, and if possible of the article, should be written on the blocks to facilitate identification.*

Letters, whether intended for insertion or for private information, must be authenticated by the names and addresses of their writers—not necessarily for publication.

We cannot prescribe or recommend practitioners.

Local papers containing reports or news paragraphs should be marked and addressed "To the Sub-Editor."

Letters relating to the publication, sale, and advertising departments of THE LANCET should be addressed "To the Manager."

We cannot undertake to return MSS. not used.

Communications, Letters, &c., have been received from—

A.—Messrs. Allen and Hanburys, Lond.; American Medical Association, Chicago; Dr. Armly Ashkenny, Basingstoke; Captain C. H Attenborough, R.A.M.C.; Messrs. Arnold and Sons, Lond.; Mr. G. F. Aldous, Plymouth; Dr. D. E. Anklesaria, Ahmedabad; American Medical Editors' Association, Charlotte, President of; Lieutenant-Colonel G. J. Stoney Archer, R.A.M.C.

B.—Mr. E. Baker, Birmingham; Messrs. W. H. Bailey and Son, Lond.; British Medical Association, Lond., Medical Secretary of; Bradford Corporation, Town Clerk of; Dr. G. Blacker, Lond.; Miss Louisa Brink, New York; Dr. W. Langdon Brown, Lond.; Dr. A. N. Boycott, St. Albans; Mr. James Berry, Lond.; Board of Agriculture and Fisheries, Lond.; Berkshire, Acting School Medical Officer of, Reading; Dr. John Brown, Blackpool; Mr. Oliver F. Barr, Paisley; Messrs Brown Bros., Lond.; Captain Andrew Barr, A.V.C.; Miss L. Bourke, Lond.; Mr. Tom Bird, Lond.

C.—Dr. R. J. H. Cox, Woolwich; Captain J. G. Cooke, R.A.M.C.; Mr. J. N. Curwood, Bromley; Corporal M. Corfe, Netley; Mr. G. G. Champion, Manchester; Dr. H. E. Crook, Lond.; Dr. W. H. Cheetham, Leven; Messrs. E. Cook and Co., Lond.; Chesterfield Hospital, Secretary of; Dr. R. J. Cyriax, Lond.; County Asylum, Prestwich, Medical Superintendent of; Mr. John M. Cox, Dundalk.

D.—Messrs. W. Dawson and Sons, Lond.; Mr. E. Del Mar, Lond.; Dr. W. R. Dunstan, Lewes; Major A. Don, R.A.M.C.(T.); Denver Chemical Co., Lond.; Messrs. Dale Reynolds, and Co., Lond.; Dr. H. H. Dale, Lond.

E.—Dr. G. N. Edmondson, Guisborough; East Sussex Hospital, Hastings, Secretary of.

F.—Mr. S. Fougner, Lond.; Messrs. Fairchild Bros. and Foster, Lond.; Mr. J. Ernest Frazer, Lond.; Dr. Richard B. Faulkner, Pittsburgh; Messrs. Henry Frowde and Hodder and Stoughton, Lond.; Captain Duncan C. L. Fitzwilliams, R.A.M.C.

G.—Dr. A. P. Ghatak, Arrah; Mr. M. Pearson Gabe, Merthyr Tydfil; Major S. Goto, Lond.; Captain A. Russell Green, R.A.M.C (T.); Dr. Lewis Graham, Birmingham; Guardian Assurance Co., Lond., Fire Manager of; Mrs. Grieve, Chalfont St. Peter; Surgeon P. L. Gibson, R.N.; Messrs. Charles Griffin and Co., Lond.; Lieutenant-Colonel M. H. Gordon, R.A.M.C.; Gibraltar, Medical Officer of Health of.

H.—Dr. A. N. Hagman, Moscow; Dr. E. Hawkins, Birmingham; Mr. N. Bishop Harman, Lond.; Messrs. Hilton and Co., Lond.; Messrs. A. Heywood and Son, Manchester; Miss Hiles, Bristol; Hyde Corporation, Town Clerk of; Dr. T. E. Harwood, Lond.; Hertfordshire, County Medical Office of, Hertford; Miss K. Heanley, Lond.; Home Department, Under-Secretary of State for, Lond.; Mr. W. G. Hill, Lucan.

I.—Insurance Committee for the County of London.

J.—Jenner Institute for Calf Lymph, Lond.; Jeyes Sanitary Compounds Co., Lond.; Professor Edwin Oakes Jordan, Chicago; Mr. P. C. Varrier Jones, Cambridge.

K.—King Edward VII. Hospital, Cardiff, Secretary of; Dr. Robert Knox, Lond.; Mr. H. Kimpton, Lond.

L.—Liverpool Parish, Clerk to the; Lieutenant J. A. Liley, R.A.M.C.; Messrs. E. and S. Livingstone, Edinburgh; Leeds General Infirmary, General Manager of; Dr. A. P. Luff, Lond.; London Dermatological Society, Hon. Secretary of; Dr. O. Leyton, Lond.; London and Counties Medical Protection Society, General Secretary of; Mr. H. G. Lyons, Lond.; Dr. A. S. Leyton, Leeds; Mr. Rickard W. Lloyd, Lond.; Local Government Board, Lond., Secretary of; Messrs. Le Brasseur and Oakley, Lond.

M.—Medical Supply Association, Lond.; Maruzen Co., Tokyo; Messrs. J. Menzies and Co., Glasgow; Dr. Irwin Moore, Lond.; Major D. F. Mackenzie, R.A.M.C.; Messrs. Mather and Crowther, Lond.; Maltine Manufacturing Co., Lond.; Mr. G. Mayall, Bolton; Dr. C. Muthu, Wells; Medico-Psychological Association of Great Britain and Ireland, Lond., Acting Hon. General Secretary of; Medical Sickness and Accident Society, Lond.; Mr. J. E. R. McDonagh, Lond.; Mr. J. Y. W. MacAlister, Lond.; Manchester Clerical, &c., Association; Sir William Milligan, Manchester.

N.—Messrs. Neyroud and Sons, Lond.; North Ormesby Hospital, Middlesbrough, Secretary of; North-East London Post-Graduate College, Dean of; Mr. E. M. Nelson, Lond.; National Medical Union, Lond., Assistant Secretary of.

O.—Mr. Joseph Offord, Lond.

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Q.—Quantock Vale Cider Co., North Petherton.

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